

MINUTES

Klamath Fishery Management Council  
August 1, 1994  
Columbia River Red Lion Inn, Portland, OR

10:00 am Convene

ADMINISTRATION

1. The meeting was called to order by Chair McIsaac with a quorum of members present (Attachment 1).
2. Review and approve agenda

Wilkinson: I would like to add an agenda item. I've asked CCFRO to repeat the report they gave to the Task Force regarding their juvenile outmigrant monitoring program.

Orcutt: The tribe's intent is to forward the spawner deficit accounting proposal to the Pacific Council today.

Grover: I would like to add an agenda item. I'll give an update on Department of Interior's (DOI) position on the Trinity Program reauthorization.

\*\* Motion to approve amended agenda (attachment 2).

\*\*\*\* Consensus.

3. Approve minutes of meetings held: March 1-2, March 7-8, April 4-5, and May 23.

Fletcher: The Yurok Tribe will provide corrections to the minutes later (handout A).

Boydston: I need to see these corrections and compare them to California Department of Fish and Game's (CDFG) written clarification on our statement made at the March 1 meeting (handout B) before I can approve the minutes.

McIsaac: We will wait to approve the minutes until later.

TECHNICAL REPORTS

4. Hoopa Tribe's presentation of their spawner deficit accounting proposal

Orcutt: We need to move forward on the spawner deficit accounting (SDA) issue today. The tribe introduced this concept as a proposed amendment to the fishery management plan to add accountability to protecting the fishery resource. SDA is the only proposal that puts accountability in management. Regarding the variations between brood and cohort year accounting, we have found that supplementing the cohort year is better than supplementing the

brood year. Our main concern over a *de minimis* fishery is that we are watering down the Pacific Council's authority because once it is written into the fishery management plan it constrains the authority to practice conservation biology to reach the target floor. A *de minimis* fishery has also been proposed for coho -- we are concerned that this management proposal will also limit the Pacific Council's authority. The SDA proposal is supported by the full tribal council and Hoopa Tribal members.

Q: What do you mean about putting accountability in management?

A: The intent is that SDA will bring accountability to fishery management because in some cases overfishing has caused subfloor escapement.

Q: Is it true that the SDA proposal does not have a *de minimis* feature to it?

A: The proposal does not have a *de minimis* feature in it for years in which the projected preseason escapement is 35,000-50,000. [Mike, did you mean this?] In years in which the preseason projections are below 35,000 we will defer to doing what is right for the resource. For example, in '92 the Pacific Council selected an 8% harvest rate. If escapement looks like it is going to be below the floor, we will leave it to the Pacific Council to make the right decision.

Q: So would the proposal have a line in it saying that it would not preclude a *de minimis* impact on an annual basis?

A: We are willing to negotiate about all these things if the proposal goes forward to the Pacific Council.

Q: If I understand what you are saying, your proposal does not have a strong feature precluding any fisheries whatsoever. If the forecast is less than the spawner deficit accounting cap, is there some flexibility between 35,000-50,000? Would it be a hard lock at zero fishing in this instance?

A: *De minimis* would come in between 35,000-50,000. The reality is that in every year, Klamath stocks continue to decline to be at or below the floor.

Q: If the Hoopa proposal goes forward as a Klamath Council recommendation, then the Pacific Council adopts it as an amendment, do you or do you not have a lock in at a hard zero?

A: Zero could be considered. We would leave that to PFMC.

Boydston: I am not sure how to decipher the description of the tribe's proposal (HVT1). I'd like to know more clearly what the proposal is. In the modeling, it calls for "No allowance for a *de minimis* fisheries" so I could conclude that below 35,000 means that there would be no ocean fishing.

McIsaac: Maybe what we are seeing here is a proposal for it to be zero, while recognizing that there is an emergency allowance in the PFMC rules to deviate from that.

5. Council discussion of the spawner deficit accounting proposal

Walters: A long time ago the spawning escapement floor was decided based on river flow levels that we had in the 70's. What would have happened in '93 if the escapement was above the floor when the flows were low? Considering all the fish that died at Iron Gate Hatchery, how many spawners would have died or unsuccessfully spawned during that time period? We have been denied access to a lot of fish that would have unsuccessfully spawned anyway. I would like to hear opinions on what would have happened.

Orcutt: Prior to '80, 120,000 acre feet of water were released down the Trinity River (10% of total annual runoff). In 1980, the Secretary of Interior raised the minimum floor to be 340,000 acre feet (25% of annual runoff). Our efforts at this time are to assess the amount of water needed for salmonids. Preliminary Fish and Wildlife Service (FWS) data show that 600,000 af are needed for spawning and rearing on the Trinity side. On the Klamath side, your concerns are valid -- numerous reports (Bureau of Reclamation) show '92 as one of the worst water years on record. This resulted in dewatered redds in the mainstem.

Fletcher: Bureau of Reclamation (BOR) will continue to ask us why they should provide water if there are no fish to utilize it. Note also that natural runs, and Trinity Hatchery, were low on escapement in '93.

Q: Walters: How many fish would have survived at Iron Gate Hatchery (IGH) and Trinity River Hatchery (TRH) if 50,000 fish showed up?

A: Boydston: We would have had more mortality of adult fish. It wouldn't have affected egg production because IGH was already at maximum egg production capacity. We would have had greater returns to TRH, so would have been able to meet our egg take goal there.

Orcutt: There are state adopted water quality criteria that need to be met on the North Fork of the Trinity River (e.g. a block of water is provided in July/August to meet temperature standards (60° F).

Bitts: Not only did we have a dewatering event in the main river this year, but we also saw dewatered redds in the Shasta River. An anonymous source tells me that flows dropped from 20 to 10 cfs during the outmigration period this spring. The question remains "what would have been the marginal benefit of those 15,000 extra spawners if SDA was being used?"

Walters: What if SDA had been in place for the past 2 years? The fish wouldn't have survived in the river because the water conditions were so bad. We need to have a scientific evaluation of what would have happened if SDA was put in place a few years ago.

McIsaac: The technical team has done some hindcasting on that. Maybe George could give us a generic answer to the question regarding the marginal benefit of 15,000 more spawners above the 35,000 level. I realize that your analysis does not incorporate any habitat changes (due to differing flow levels). Can

you give us an idea of the technical appraisal for 15,000 spawners above 35,000 (to give us average results)?

Kautsky: We don't know the answer to that question. We could pick a certain year (e.g. drought year), but we don't know what the conditions will be for other correlated natural events (e.g. conditions for spawning in November or conditions in May/June for rearing) and then we don't know how to apply that to future years.

Walters: How many fish do we have to let go to IGH to get enough fish to TRH?

Kautsky: In the long run, 53% of the escapement goes to IGH compared to the escapement to TRH. Last year we had 20,000 fish escapement to IGH and less than 1,000 to TRH. We don't know how to explain this anomaly. It may have been associated with flows.

Bitts: In considering the differential that occurred last year, remember that: 1) the bulk of fish last year were 3 year olds, and 2) in 1990 TRH released "near-zero" fingerlings which might have had a severe impact on the return in 1993. [Note: TRH fingerling release in 1990 was 2.7 million. Zero release occurred in 1991. (CDFG, Hatchery production report)]

Boydston: I am concerned about Klamath basin management. SDA doesn't address the problems with low productivity from the Salmon, Scott, and Shasta Rivers. SDA has a fault which is that it gives us a false sense of security in regards to sub-basin stocks. I want to refer to the Klamath River Review Team Report (PFMC) (provided upon request). We should look at this report while we are considering the SDA proposal.

Orcutt: I find your concerns about managing sub-basin stocks amusing. In the past, whenever anybody brought up the need for doing a sub-basin analysis for fall chinook, it didn't happen. When the state was asked to review Shasta River escapement for potential listing (for threatened or endangered status), I understood that the state responded there wasn't enough information to warrant review for state listing.

#### 6. Report of the Technical Advisory Team

Kautsky: Table 5 on page 10 of the TAT report (handout C) presents results of the team's analysis of what would have happened if SDA was in effect in recent years. Hindcasting didn't necessarily reflect benefits or detriments to the resource in the following year. Hindcasting was simply a year by year assessment. The cap of 46,500 was the highest deficit requirement we could have used. The first column looks at the predicted total impacts. The actual escapement (shown in column 3) generates the numbers for the columns to the right of it. So, the deficit in 1990 pushed the target in 1991 right up to the maximum cap of 46,500 natural escapement.

Under 5% *de minimis* impact, 6,200 fish would have been harvested in 1991. Except for 1993, SDA targets wouldn't have been met even in the absence of all fishing. Under the 5% *de minimis* impact rate with SDA, an appreciable

reduction in harvest would have occurred in all years (below that which was prescribed for management) comparing column 1 to column 6.

Under 8% *de minimis*, harvest would have increased substantially over the 5% option, but would still have been more restricted than the actual management. In 1992, we managed for 8% so harvest would have been 12,900 under *de minimis*. In 1993 and 1994 harvest would have decreased using 8% *de minimis*. The natural escapement for fall chinook is shown in the second to the last column and indicates that in 1992 we would have dipped into the floor (because escapement was 23,000). This demonstrates that under the *de minimis* provision, there is flexibility in SDA. [George, what do you mean?] The 8% column is titled "ocean impacts" but, the 12,900 does not represent just ocean impacts. It represents the allocation of 12% of the non-tribal harvest for in-river recreational fisheries, ocean harvest and 50/50 allocation for tribal:non-tribal. The 5% column reflects total ocean and in-river considerations under that allocation guideline.

7. Council discussion of the Technical Advisory Team's report  
(questions answered by Kautsky)

Q: If one looks at the column "actual natural escapement" and the very next column "SDA escapement target" you can see how the deficit is added on (up to the cap) every year. But how is it that the next column shows 46,500 as the escapement in 1993 under 5% harvest?

A: The 5% *de minimis* allowance would have allowed 53,800 natural escapement. We calculated a higher harvest in order to arrive at the 46,500 cap. So in this case, the escapement cap overrode the *de minimis* cap.

Q: In terms of general hindcasting in recent years, would the Hoopa proposal have given us a target escapement of 50,000 in every year (except in 1994 when escapement would have been slightly under)?

A: That's correct. That is the way we modeled it (for HVT1). For HVT2, we averaged the *de minimis* allowance in years when escapement was expected to exceed the 35,000 floor to allow a 5% harvest rate.

Q: If there was zero fishing in 1993, then how many Klamath fish would have died at the hatchery with the high water temperatures/low oxygen that existed? How many fish would we have not had access to that later became part of this sacrifice?

A: I don't have that number.

Bitts: Table 7 shows the season structure for ocean fishing with a 10% overall impact rate. These seasons shown are more restrictive than the 1992 season which is the most restrictive ever experienced. We have been experiencing reductions that are extremely expensive to the sport and commercial fishing industries. We have, effectively, been in *de minimis* fisheries for the past three years. *De minimis* improvements to the escapement to the Klamath system are the best that can be expected. Even if fish can return, there is not going to be enough water.

Q: In Table 5, does the sixth column show what would have been the predicted preseason impacts (e.g. in 1991)?

A: Correct. Those numbers are for comparison to what was actually predicted. We now have data that is more updated, but we will use the data in the table for comparative purposes.

Boydston: If actual natural escapement is taken as a proportion of the projected actual escapement, you can get a feeling for what would have been achieved. For example, if 43,600 was projected pre-season then in reality (if you had gone through that management scenario) you would have only achieved 14,000 natural spawners (instead of 11,600 actual). To achieve a couple thousand more spawners, you would have practically shut the ocean down to bring the natural escapement up to maybe 14,000.

Kautsky: The table shows preseason estimates that are bound by whatever the methodology was that year. We wanted to clarify the best estimate of what would have happened for you to look at.

Q: On page one, you describe the modeling of status quo. In the last paragraph, as abundance drops off you describe reductions in ocean and tribal fisheries, but in the last sentence you describe that cuts will be made in the quota for terminal fisheries. At what abundance level does this go to a zero terminal fisheries?

A: For a schematic, you can refer to Figure 3. The harvest wedge that is depicted is not meant to be quantitative. Yes, there is some harvest occurring, all the way down to an escapement forecast of zero. We used 5% harvest impacts for this model, which is probably realistic when we look at overall impacts (including the impact of whiting by-catch, catch & release mortality, poaching, etc). The Technical Team figured there is always incidental impact. We modeled it at 5%, and assigned it to tribal harvest.

#### Discussion on definition of status quo

Boley: Look at the "percent no ocean fishing" line in Table 1. Shouldn't that number get smaller if you shift from the more restrictive "HVT no *de minimis*" column to the less restrictive "status quo" column?

A: No, the number would go up, because we modeled the status quo option as if that incidental impact occurred in the river. In order to provide that impact, it would require a reduction in the ocean harvest.

Boley: If you define status quo as 50/50, then the percentage of "no ocean fishing" would be something less than 1.4%. Your definition of status quo is different than the current situation. Why did you select this definition?

A: It reflects the fact that, in our modeled situation, in some years you have no ocean fishing at all while some occurs in the river. This is not necessarily status quo, but we labeled that incidental impact of 5% as tribal harvest.

Boley: Under the HVT1 proposal the tribal/non-tribal allocation is 50/50 of any harvestable amount of fish. This report says that, under 50/50 sharing, we have only 0.8% of the years where we have no ocean fishing.

Kautsky: The only difference between the first and second column in Table 1 is that the first column defines status quo as being "the years when the floor is not going to be met and fisheries are reduced proportionally 50/50 to the floor level." At that point, any impacts that do occur are allocated to the river -- so there would be slightly more closure in the ocean.

Boley: I don't agree with that definition of status quo.

Q: Bitts: I am concerned about the validity of this report when it has information in it (definition of status quo) that I don't agree with. Why did you present a totally different scenario than what I understand status quo to be?

A: The information presented is closer to what the HVT proposal is (modeled at a 5% rate). We had to choose some rate. In every year we choose to manage for, some kind of impact is realized.

Fletcher: This Council is not charged with coming to agreement on a definition for status quo. We are charged with answering the question of whether or not SDA benefits Klamath stocks.

Boley: Table 1 shows that there isn't much difference between the alternatives. The management alternatives don't seem to be as critical an issue for stock productivity as what kind of conditions are available in the ocean, river, etc. The issue of accountability is a higher concern.

Fletcher: Hopefully harvest managers are accountable because of our opportunity to structure seasons based on the stocks of concern. This year, we tried to lessen the impact on earlier running fish by structuring our seasons so that they are protected. This should help us convince the water managers to change their management.

McIsaac: I have a problem with the last two sentences in the paragraph describing status quo:

Beyond this point, for modelling purposes, further reductions in harvest rates are made in ocean fisheries exclusively, equally by the commercial and recreational fisheries, until the ocean fisheries are extinguished. As forecast abundance continues to decrease, cuts will be made in the quota for the terminal fisheries.

This presumes that the 12,000 level stayed the same. This is not something that has occurred.

Polos: The statement "for modeling purposes" should be emphasized in this document. The 12,000 fish tribal quota is not "status quo", but that's how the model was run.

McIsaac: Has this report gone to PFMC staff? (Yes.) Let's emphasize the "for modeling purposes" description of "status quo", if people ask us about it.

Orcutt: The Hoopa Tribe has never put a number on the minimum number of fish our tribe needs for subsistence or ceremonial purposes.

Bitts: I can't find Kope's discussion in this report: he said that a marginal benefit could occur if SDA was implemented as long as the floor is sufficiently below optimum spawning numbers. If the floor were near, at or above optimum spawning numbers, then implementing SDA would produce an adverse effect on the resource. He then said that we don't have enough information to know what the floor should be, but we do know that the current floor should be considered accurate until it is reviewed (near or above optimum spawning numbers). The data that we have collected since the floor was set needs to be reviewed. We shouldn't move forward with this proposal unless the definition of the "current floor" is noted as being "up for review" in this report.

McIsaac: Kope's analysis is part of the record from an earlier meeting.

Boley: The discussions on SDA are inseparable from the discussions on the proper floor level -- which is inseparable from the discussions on the amount of water needed for habitat -- which is inseparable from all the other variables. This whole issue is intricate. Maybe when we talk about SDA we should also talk about water deficit accounting.

Fletcher: Magnuson Act amendments may lead to that. The Habitat Committee will be looking at essential fish habitat when we meet today.

Orcutt: We have heard a lot of discussions on this. The Trinity program has an escapement floor of 63,000 fish -- way above what the Klamath side has. As far as habitat management goes, if you look at what an acre of water is worth in California, you are looking at an extremely skewed economic perspective. We need to look at all these things together.

Q: Regarding the Technical Team's analysis, I (Boydston) first want to commend the team for their efforts. Second, I want to clarify what the alpha and beta parameters were that were used in this report. The small effect of stock parameters is striking, probably because the range of alpha and beta modelled is small. What is the difference if low productivity was used? What does a high stock productivity look like?

A: No, we did not look at other combinations of alpha and beta. The earlier report did. We thought that, for the purposes of this report, that it was appropriate to model the fitted parameters (Table 3 & 4). The difference between the tables is revealed when we change from a linear intercept predictive model to a forced zero method. The forced zero methodology provides 85% of the protection from overfishing.

Q: What about the beta parameter? We used to think that beta represented that point on the curve where we got the maximum production from the population. How many adults does it equate to?

A: The fitted data show the curve cresting at about 38,000 spawners. The default parameters used in the model, the "assumed" beta, top out at about 50,000.

Q: Are the values so close together that it hides the results?

A: Yes. The other factor hiding the results are all the other variables and all the other variability (stock recruit relationship). When you build in all that error it may mask the benefits from the model.

Bitts: The team did the comparison forcing the data through zero instead of linear regression. Was a similar comparison contemplated between the partitioned cohort projection methodology (pcpm) and the earlier methodology? It seems to me that pcpm predicted with better accuracy the natural component of the run. Was this looked at in terms of reducing the incidence of overfishing?

Kautsky: We are reviewing and comparing the methodologies right now. We have looked at forced zero regression, linear regression with a positive y-intercept and the pcpm. I may have time to report on this later. Preliminarily what we are finding is that no one method appears to be best. The pcpm should be the least biased in the long term. [The TAT reviewed this report by mail last week. A sub-group of the TAT is working on it. Barnes says that it will then be circulated to the Council by August 22. The final will go to the Pacific Council by September 25.]

Polos: I want to point out that we wouldn't use pcpm with natural fish, which is solely what our SDA report deals with. Running the data through zero results in an 84% reduction in "overfishing".

McIsaac: Would proposers like to speak about their alternatives to this proposal prior to it going out for public comment?

Fletcher: The Yurok Tribe (and other tribes) have held a position that we have an emergency minimum need that needs to be met prior to other fisheries occurring. This priority issue needs to be considered as the main focus of the Yurok alternative.

Boydston: The CDFG proposal is an attempt to legitimize what is already going on with regard to ocean/in-river management. The Department of Commerce has taken the position that we can't close down the whole ocean in order to protect Klamath chinook. We have proposed a level of ocean fishing that would provide for harvest of Sacramento River chinook south of Pt. Arena and harvest of other stocks of chinook North of Florence South Jetty. This would also incorporate the idea of having an elevated floor of 43,000 per year following the years in which the 35,000 fish floor is not met. This also provides for an 8% ocean harvest rate with an equal number of fish taken in tribal fisheries.

McIsaac: Are there any questions on these two alternatives?

#### 8. Public comment on the issue of SDA

Judy Cunningham, representative of Klamath Management Zone Coalition and United Anglers: The consensus of both of these organizations is opposition to the SDA proposal because we feel it is a further restriction in the ocean

fishery. Other issues need to be addressed. I agree with the statements made by Scott Boley in regards to taking into consideration the watershed conditions.

Lunch

7. Council discussion of the Technical Advisory Team's report  
(continued)

Kautsky: Exhibit G (handout D) is a matrix that allows you to compare and contrast the options for SDA. The intent of this document is to put it all on one page, so that you can all understand the various versions of what is being proposed.

Bitts: I want to clarify my position on the 50/50 split. The 50/50 split is currently the law of the land. However I am not willing to forward anything for consideration as an amendment to the framework plan that uses the 50/50 split as a foundation. I am a plaintiff in that case so I will vote no on any motion that uses this as a foundation.

Kautsky: The 50/50 allocation is not part of the SDA concept, so the two issues could be uncoupled.

9. Action: Consider either sending the Hoopa Tribe's proposal to the Pacific Council or reporting to the Pacific Council on this group's discussions.

\*\* Motion (Orcutt): Forward alternative A (HVT1) to the Pacific Council for possible incorporation to the fishery management plan as amendment 12. The Pacific Council could then begin their scoping process.

Seconded (Wilkinson).

Discussion

Boydston: I will not vote in favor of this proposal. Refer to page 4, item #3, dealing with stock protection -- this paragraph shows that the Hoopa proposal reduced the incidence of overfishing by 75%. However, reducing the bias in the preseason stock prediction methodology (forcing regression through zero) resulted in an 84% reduction in overfishing. These changes in stock prediction methodology have been implemented. I don't see any reason to go into SDA when it appears that the appropriate changes have been made in the management that negate the necessity of the SDA approach.

Bitts: I will not support this motion either: 1) I agree with Boydston's reasons, 2) there is uncertainty as to whether the floor is known, and 3) this proposal is the most expensive (in terms of fishery restrictions) and the least effective method (in terms of accomplishing any positive effect on productivity of the resource).

Bostwick: I do not support this motion, for a different reason, although the end result is the same. My reason is that accountability for the resource has not occurred in the net fishery. I don't know if this problem is due to the way the regulations are written or the ways they are enforced, but I'm upset at this lack of accountability to the resource. I've seen: sturgeon rotting in unattended nets, a 65 x 35 net used by an indian (illegal net depth and illegal tossing of jack salmon from net), gill nets unattended, sunken gill nets unattended, and unattended drift nets. Previously, all these things were illegal. You can't tell me these things demonstrate accountability and you can't ask me to give up more of my opportunity to fish when I have nothing more to give up.

Fletcher: To address these concerns. This season and throughout most of last season, the Yurok fishery has been quite restrictive (e.g. this spring we only fished three days a week, closure from 9 pm Sunday until 5 am Wednesday). The Bureau of Indian Affairs (BIA) is supposed to enforce the regulations. We sit down with fishermen to scope and decide on the regulations that will best protect the resource. The season structure resulted because fishermen bought into it. I seriously doubt that you saw sturgeon rotting in the net. I don't want to bicker about all this -- all fisheries have public perception problems.

Bitts: I have a lot of respect for tribal values and professionalism of the Yurok Tribe and CCFRO. At the same time, the tribal fishery has a serious public image problem in the counties along the north coast of California. The problem endures.

Call for question:

California Commercial Salmon Fishing Industry:	no
Pacific Fishery Management Council:	no
California In-River Sport Fishing Community:	no
California Department of Fish and Game:	no
Non-Hoopla Indians Residing in the Klamath Conservation Area:	abstain
Hoopla Indian Tribe:	yes
U.S. Department of the Interior:	abstain
National Marine Fisheries Service:	abstain
California Offshore Recreational Fishing Industry:	no
Oregon Commercial Salmon Fishing Industry:	no

Motion fails.

McIsaac: My understanding is that representatives and their designated alternate are allowed a vote. Alternate's alternates are not entitled to vote. Therefore, Viele (NMFS) and Grover (DOI) abstain.

Iverson: The operating procedures do not specify voting procedures for alternates'.

\*\* Motion (Wilkinson): Status quo (50/50 tribal/non-tribal allocation, as shown in Exhibit G).

Seconded (Orcutt).

Q: Does your motion include the changes in predictive methodology made for the 1994 season?

A: My motion is silent on that.

#### Discussion

\*\* Friendly amendment (Boydston): Adopt the Klamath River Fall Chinook Review Team Report (June 1994) as guidance to the Council in terms of managing for fall chinook. When you get a chance to study it, you will see that Klamath stocks have been fished much harder than stocks on the Trinity side.

\*\* Action: Amendment accepted. This should be included in the presentation to the Pacific Council.

Q: Can you clarify your meaning?

A: The motion is as summarized in "Exhibit G". It includes a 50/50 harvest split.

Q: Keith, what is your purpose?

A: To assist this Council in sending a recommendation to PFMC.

o There is going to be considerable debate on the definition of status quo. I am not ready to lock myself in to this definition.

o It seems like we are in the process of elimination to come up with something to forward to the Pacific Council.

Call for question:

California Commercial Salmon Fishing Industry:	no
Pacific Fishery Management Council:	abstain
California In-River Sport Fishing Community:	no
California Department of Fish and Game:	yes
Non-Hoopa Indians Residing in the Klamath Conservation Area:	no
Hoopa Indian Tribe:	no
U.S. Department of the Interior:	abstain
National Marine Fisheries Service:	abstain
California Offshore Recreational Fishing Industry:	yes
Oregon Commercial Salmon Fishing Industry:	yes

Motion fails. Friendly amendment fails with the motion.

Q: Bitts: Is there another way to get at Keith's objective?

A: Wilkinson: Perhaps we could strike the "50/50 split" statement.

Q: Grover: Could we include the Technical Team's report as part of our recommendation to the Pacific Council?

A: Wilkinson: That report has already been forwarded to the Pacific Council. Although it did not go with a cover letter signed by the Klamath Council's chair.

Break for caucus.

\*\* Motion (Wilkinson): Forward status quo -- excluding all printed information in the bottom block of Exhibit G. Include 2 documents for presentation to the Pacific Council (TAT Analysis and the Klamath River Fall Chinook Review Team Report) because they have meritorious value.

Seconded (Boydston).

#### Discussion

Boydston: I would like to clarify that the TAT's main report should go forward, not all the appendixes (because they go into other subjects and may cloud the issue).

o We should clean up the TAT report before it is forwarded.

Q: Orcutt: Does the definition of status quo (that is going forward) include the Secretary of Commerce's decision (1992) to elevate the natural spawner escapement floor? If not, where does it fit?

A: Wilkinson: It is my intent to not include that elevated floor. I understood that the Secretary of Commerce would act on this separately.

Boydston: We would continue to manage for a 33% escapement rate.

McIsaac: So, I'm hearing from the Council that they are in favor of forwarding the SDA report to the Pacific Council. The Council would like me to note in my report that we are not in agreement as to the definition of status quo as described in the report.

#### Call for question:

California Commercial Salmon Fishing Industry:	yes
Pacific Fishery Management Council:	abstain
California In-River Sport Fishing Community:	yes
Non-Hoopa Indians Residing in the Klamath Conservation Area:	abstain
National Marine Fisheries Service:	abstain
Hoopa Indian Tribe:	no
California Department of Fish and Game:	yes
U.S. Department of the Interior:	abstain

California Offshore Recreational Fishing Industry:                   yes  
Oregon Commercial Salmon Fishing Industry:                   yes

Motion fails.

McIsaac: Are there any other motions that pertain to the issue of spawner deficit accounting?

\*\* Motion (Orcutt): Forward a report to the Pacific Council of the range of alternatives that the Klamath Council looked at for supplementing spawning escapement. Status quo.

Seconded (Wilkinson).

Q: Could you achieve the same result by forwarding the two reports without putting "range" in?

A: The Pacific Council may want to hear that the Klamath Council wants the range reviewed.

o We would have to note that there is still some debate as to what is status quo.

Q: Is the intent of the motion to forward the report of recommendations? or to forward the recommendations?

A: The intent is to encompass the various alternatives shown in exhibit G.

Wilkinson: Should the paragraph on page 1 of the report on SDA be stricken?

Fletcher: My problem is that the description of status quo in Exhibit G is different than the definition in the report. I say that we shouldn't believe any of these definitions -- no one is comfortable with these definitions.

\*\* Friendly amendment: We, as a Council, have not agreed to a definition of status quo.

o When the chair makes the report to the Pacific Council, he will elaborate on this discussion -- specifically that there was a lack of consensus on various views/definitions of status quo.

Mike, would you care to respond to these proposals to modify your motion?

Orcutt: Exhibit G has already gone to the Pacific Council (it will be included in their briefing information). I need to hear the concerns with the other report.

Fletcher: The problem is that there are two different versions of definitions: 1) the TAT report, and 2) the packet that the Pacific Council has (appendix to the TAT report).

Wilkinson: It is becoming clear that in order to get any consensus, the motion will need to: 1) exclude exhibit G, 2) exclude the paragraph describing status quo on page one of the TAT report, and 3) include the overfishing report. [Keith, did you mean for #3 to be the Fall Chinook Review Team Report?]

Bitts: It is appropriate for this Council to decide whether to endorse the Klamath River Fall Chinook Review Team Report. I would like to point out that this report was prepared under the auspices of the Pacific Council. It was sent to us from them, so it is not as if we are sending them something that they haven't seen. We are just endorsing the product of their work. The TAT report has already been forwarded to the Pacific Council.

McIsaac: The motion on the floor does not refer to the overfishing report.

Orcutt: I'm not referring to the overfishing report at all.

\*\* Motion re-stated: Forward to the Pacific Council the views of the Klamath Council regarding supplemented escapement (e.g. SDA) and the range on the table -- from status quo to alternative D. The Pacific Council could then send the proposals out for public review.

McIsaac: If the Pacific Council considers this motion, your motion would only ask them to look at this range. No other options would be considered to go out for public review. What I expected you to say is that the Klamath Council recommends to the Pacific Council that these four alternatives of supplementing spawners be forwarded for public review. Was that it, or would you rather it be just if the Pacific Council considers the supplementation issue that these four be included in it?

Orcutt: The definition of status quo is being defined by technical methodology and litigation. This Council doesn't need to make a statement on status quo. What is the purpose of this Council? Whenever we are faced with critical issues, we discuss them yet put them off to others (Pacific Council) to decide on. Maybe the money that is spent on maintaining this Council could be better spent on restoration projects.

Call for question:

California Commercial Salmon Fishing Industry:	no
Pacific Fishery Management Council:	no
California In-River Sport Fishing Community:	no
Non-Hoopa Indians Residing in the Klamath Conservation Area:	abstain
National Marine Fisheries Service:	abstain
Hoopa Indian Tribe:	yes
California Department of Fish and Game:	no
U.S. Department of the Interior:	abstain
California Offshore Recreational Fishing Industry:	no
Oregon Commercial Salmon Fishing Industry:	no

Motion fails.

McIsaac: Are there any further motions on the concept of spawner supplementation? Seeing none, we will continue with the agenda.

#### OTHER REPORTS

##### 10. Retrospective on 1994 spring fisheries (Tribes, agencies)

###### Yurok Tribe

Fletcher: The paper you have before you (handout E) shows the status of the spring harvest on the Yurok reservation. We have tried to lessen our impact on the stocks of concern (e.g. spring chinook) and I feel that tribal fishermen have bought-in to efforts to reduce impacts. Last year we caught 550 fish, so this year's harvest is smaller (below the long term averages). This year we have had more closures.

Q: Do you have any kind of estimate of effort?

A: There was not much effort in April and May. In June and July there was more fishing but there was also more aquatic vegetation that clogged the nets.

###### Hoopa Tribe

Orcutt: The 244 spring chinook caught this year (through June 30) compares to 80 caught by the same time last year. The effort was about the same for both years. Last year we had somewhat better flow conditions, specifically the April/May/June flushing flows. This year returns us to near-drought conditions. Normally we see June as the month when most harvest occurs. This coincides with the hatchery releases.

Q: Are you looking at scale samples to determine run timing (specifically, the differential between hatchery and natural fish)?

A: For the last 3 years the tribe has been working on a integrated resource management plan. Part of this plan is the issue of the ability to identify and hopefully structure fishery impacts so that harvest doesn't impact the spring run wild stocks returning to the South Fork. We have also been working with CDFG to determine time of entry of these (potentially) listed stocks.

- o CDFG in Weaverville (Mark Dean) has interesting information on run timing. It looks like natural fish are coming through in April and May.

###### CDFG

Boydston: CDFG doesn't have much new information on spring chinook counts in the Klamath. The reports from anglers are that they see more spring chinook in the river.

## Oregon Department of Fish and Wildlife (ODFW)

McIsaac: Fisheries off the Oregon coast were basically less than the quota. The spring fishery was for a 1,200 fish quota off the Rogue River mouth; the actual catch was 200-300 fish. The May and June fishery south of Florence had a quota of about 12,000 fish; actual harvest was slightly over 1,000. The KMZ sport fishery had a May and June component of 10,300 fish quota; this was exceeded by 300 fish.

### Commercial troll fishery

Bitts: The troll fishery opened today above Pt. Reyes. I've heard that it did better than expected. We expected 2 million pounds for the season, although we may be able to harvest 3 million pounds. The fish are in excellent condition because the feed conditions are excellent. We have seen a lot of fish with small heads and big bellies -- which I think is a sign of fast growth. The murre chicks in the Farallons are also doing well.

- o The Pacific mackerel by-catch in the whiting fishery is less than 1/10th of last year. This may help salmon survival.
- o CDFG data is showing cooler water near the Monterey area. Kope's presentation on ocean conditions tells us that El Nino may be coming to an end. NMFS data shows a large pool of cool water off the coast.

### Ocean recreational fishery

Walters: Right now it is hard to catch rock cod without catching 10-12 salmon. We are experiencing incredibly good conditions -- there is a lot of feed available.

### New discussion item

Q: Does anyone know the status of Eel River stocks? Will they impact any Klamath fisheries?

A: Boydstun: We are concerned about the absence of salmonids in the Eel River. The reasons for the demise is the subject of much debate. Squawfish are attributed to be the main problem. There is a proposal to chemically treat Lake Pillsbury and the upper Eel River to rid it of squawfish. Other type of management actions can also be done. The perception that ocean fisheries are hammering Eel River fish is not founded. Their distribution in the ocean appears to overlap Klamath chinook, so they should get the same protection. In-river fishing regulations will most likely ban all fishing in the Eel River.

Walters: Have you heard about the gill netters in Fortuna? Apparently there was a group of locals who gill netted 700-800 fish in one night. CDFG was only able to observe 400 carcasses. In the past, there were too many fish to count in this area. I caught a 22" squawfish on the Eel last year. I've also

seen lots more mergansers this year. Studies on hooded mergansers show that they are preying on salmonids.

11. Report on responses to Shasta Coordinated Resource Management Program (CRMP) letter (Bitts, Fletcher)

McIsaac: Staff has provided us with the March 2 response from Bitts (Handout F) and the March 20 response from the Yurok Tribe (Handout G). I think the responses are good. What does the Council want to do now? Has Mr. Hart responded back to either of you on this?

Fletcher: Dave Webb from the CRMP has responded to the letter that the Yurok Tribe sent the CRMP. He wants to take us out in the field to show us the projects underway on the Shasta River.

Q: McIsaac: Do any Council members still feel that a full Council response is necessary?

A: Boley: I don't think it is necessary.

Q: Do people who do not understand fisheries management, lay the blame on fisheries management?

A: Yes, I (Fletcher) would say that there is a general tendency to blame it on the other guy. Although, at the last meeting of the Task Force, there were some positive steps to try to get the flow requirements mandated -- this occurred even with the realization that flow requirements may later hinder their professions/water deliveries.

Q: Is there any utility to formally entering into agreements with the people who make habitat management decisions? We need more fish, and more water, and at the same time we need accountability for fisheries and water.

A: Orcutt: I have given a presentation to the Shasta CRMP (as a Task Force member). The people involved on the Shasta CRMP are far removed from the problems we are having with stocks. Their use of water is a part of lifestyle that has been going on for a long time. I suggest that we take steps to further open lines of communication with them.

Fletcher: We also need to make sure that they don't forget how much we need the water -- because the fish need water. Task Force steps to scope a flow study are positive, but ultimately someone will have to decide who gets the water.

McIsaac: I'd like to thank Troy and Dave for putting the letters together and keeping the lines of communication open.

\*\* Action: KRFRO staff will draft a positive letter that acknowledges the earlier letters and invites CRMP members/chair to future meetings. McIsaac will sign.

12. Report on FY95 workplan approved by Klamath Task Force (Shake)

Grover: The Task Force's Technical Work Group reviewed and ranked a total of seventy one proposals. The priority list of projects for consideration under the large umbrella of the Klamath Restoration Program will be further divided under two umbrellas -- one of \$1 million FWS funds, the other of a yet-to-be decided amount from CDFG. Four harvest management proposals were submitted (3 from CDFG, 1 from CCFRO) for FY95 funding. One fared well, another may be funded (it fell at the \$1.5 million mark so it depends on how much funding is contributed by CDFG), the other two fared poorly. The CCFRO project to assess age composition ranked high on the list and will be funded in FY95. The CDFG project to decode CWTs removed from salmon collected throughout the Klamath basin is close to the funding line. The other two projects: creel census of fall chinook sport anglers along the mainstem (Trinity River confluence to Iron Gate Dam) and mainstem creel census of spring chinook anglers (between the Klamath River mouth and Coon Creek Falls) fared poorly with rankings near the \$2.5 million mark. The issue here is that the Task Force didn't afford importance to harvest management proposals with the allocation of funds for FY95. Perhaps the Council needs to take some type of action to encourage the Task Force to take harvest management projects more seriously. As an aside, the Trinity Task Force's Three Year Action Plan identifies \$2 million of projects primarily related to harvest management. These funds will be available beginning October 1. Approximately twenty six projects will be funded with federal funding.

- o We are dealing with less than \$1 million per year on the Klamath. We need more money.
- o The USFWS-ERO in Klamath Falls is offering funding for projects related to water quality. We need to pay attention to what is happening up in the upper basin.
- o The Task Force has some recent accomplishments that should be shared here: 1) Klamath County and Klamath Tribe representatives are now seated formally on the Task Force, 2) a subcommittee (including Orcutt and Wilkinson) is working to forward a draft Upper Basin amendment to the Task Force in October for approval, 3) there has been a lot of discussion regarding flows, 4) seed money approved for scoping a flow study in the mainstem and tributaries has been approved (Technical Work Group) will begin work on scoping this study this month).

Q: If the creel census on the mainstem Klamath is not funded by the Task Force will it still occur?

A: Boydston: We are discussing other approaches to gathering this information. We understand that Department of Water Resources (DWR) is interested in funding the position for reviewing Central Valley tags.

[KRFRO learned on 8/16/94 that funding provided by CDFG will not encompass the CWT processing project.]

13. Report on comments received on draft letter to Robinson and Ryan (McIsaac)

McIsaac: I have worked with staff to incorporate comments received on the draft letter into the version you see before you now. Is this version of the letter (Handout H) acceptable to the Council? Are there any additions or corrections?

Boley: I have no problem with the letter itself. I propose that the first sentence of the second paragraph, be the first sentence of the first paragraph.

Q: Don, what were the nature of the comments you received on the draft?

A: Most of the comments were for minor modifications of style and grammar. None detracted from the original intent of the letter (i.e. a complaint that a violation of minimum flows had occurred and a suggestion that in the future more involved parties be brought into the decision making before making flow reduction decisions). All comments were supportive of strengthening the overall concept.

\*\* Motion (Boydston): I move that the Klamath Council authorize Chair McIsaac to sign the July 29 version of the letter to Robinson and Ryan regarding operations of the Klamath water projects.

Seconded.

The sentence referred to above will be rearranged.

Add cc's to CDFG's director Boyd Gibbons and ODFW's new director Rudy Rosen.

\*\*\*\* Consensus.

Future agenda item

Orcutt: At some point in time the Klamath Council may need to take a position on reintroduction of anadromous fish. The Klamath Tribe supports the idea of reintroduction of anadromous fish above Iron Gate Dam when the Federal Energy Regulatory Commission (FERC) license is reviewed.

Break

NEW BUSINESS

New agenda item: Juvenile outmigrant monitoring (CCFRO)

Jim Craig (Handout I): In partial response to the drought and BOR failing to meet flow requirements, BOR has funded a monitoring effort on juvenile outmigration. The purpose of the study was to monitor juvenile response to higher flows, ratios of hatchery to natural fish, and determine migration timing of natural and hatchery chinook. The main findings are that the two

May pulses displaced natural fish downstream before they were ready. The fish that moved in the May pulses were (on average) 50-60mm, which is smaller than the size of fish that we have found to be outmigrating during usual flows. During the two pulses in June, the average size of fish trapped was 75-85 mm which is considered the appropriate size for outmigration. In the second pulse flow in June, we had a mass outmigration when the pulse flow and the hatchery release were scheduled simultaneously. We saw fish moving downstream faster than we have seen in 5-6 years (50 km/day). The best use of pulse flows is when natural fish are the proper outmigrating size and hatchery fish need help along their way. Since '90 we have had a rotary screw trap at the Big Bar site. This year we trapped 10 times as many natural stocks than ever before. On the negative side, late in the monitoring season (when we were taking the traps out due to high water temperatures) we heard reports of substantial numbers of dead juveniles being sighted in the lower 30 miles of the Klamath River. We think that this mortality was probably due to higher water temperatures in early July, but we don't know for sure. This year has been a similar flow year as '92 (worst year on record), which means that the water temperatures were into the 80's.

- o It is good that BOR provided pulse flows -- but it is not a substitute for meeting flow minimums.

Q: The estuary seems to be bar-bound. Do you sample the estuary?

A: Juvenile habitat surveys are being done by CDFG.

Q: In general, high rates of travel are desirable, but do we know if the ideal rate is exceeded?

A: The pulse flows were indicative of the fastest outmigration that we have seen. Since we won't be able to determine the average rates of outmigration until we finish analyzing the data, we are not yet able to make conclusions. Our feeling is that the rates of travel were within acceptable limits. The outmigration monitoring studies have a higher level of refinement than past years due to the assistance we received from CDFG this year. We commend CDFG for tagging juveniles with five different codes depending on when their parents entered the hatchery. These codes enabled us to more accurately assess the outmigration of tagged juvenile hatchery fish. In the future, we will be looking into the best ways to use these pulse flows.

Q: In consideration of the buildup of bars at the estuary, how much influence do the pulse flows have?

A: Little to none. Pulse flows are proportionally small compared to the water involved in the hydrologic dynamics forming the bar in the estuary.

\*\* Action: CCFRO will provide the report on this monitoring effort (including temperature readings) to the Council (Handout J).

14. Technical Team Assignments: Identification of harvest management data needed

Parker: As you can see from the Handout K, the Trinity Coordinating Committee (TCC) is asking the TAT to assist in evaluating the harvest management data collected by the TCC. This is an opportunity to take them up on their offer to review the scope of their data collection and make recommendations.

McIsaac: We would appreciate any help they could give us.

Kautsky: We are waiting for official direction from the Council as to what we should do on this topic. The question is, "Is the data being collected by the TCC adequate?" Barnes says that we will work on this issue at the next TAT meeting.

McIsaac: I would suggest that the Council concur in the TAT's offer to work on this at the next meeting. The TAT should also consider forwarding any other projects that may not make the Task Force's funding cut.

Orcutt: The Trinity program spends \$2.4 million annually to monitor (traps, CWT's, etc.) and collect information useful to harvest rate management. There is a need to coordinate better between these two programs.

Kautsky: We should consider a timely response to this request, as their authorization may run out.

Grover: I also sit on the Trinity Task Force. I feel that this request is a coordinating kind of effort. The Trinity does not need to out-do the Klamath. It doesn't make sense to have two programs trying to compete with each other. It is good to be informed about what the other groups are doing.

McIsaac: The TAT will let us know if there are any more opportunities for coordination that we should be aware of.

New agenda item: Trinity Program reauthorization update (Grover)

The Trinity River Task Force began steps to re-authorize their program a couple of years ago. DOI has seen a number of proposals that have gone through legislative counsel and the policy and analysis section. The original intent was to provide simple language for re-authorizing the program (extend timeframe and increase the appropriations). Since then, it has gotten more complicated. The draft reauthorization (Handout L) calls for a five year, \$22 million program that would include representatives from the Yurok and Karuk Tribes, commercial fishing, sport fishing, timber industry and environmental activist community to be added to the Task Force for the Trinity River Restoration Program. The Service's comments on this draft reauthorization are that the \$80 million worth of work that is yet to be done needs 10 years of program timeline, not 5 years. Our comments have gone forward to BOR. We are trying to compromise. DOI's intent is to introduce a bill that is similar to the one you see before you. Without being re-authorized the program extends only until September 30, 1995.

Fletcher: Tom Stokely has put together another draft version of reauthorization language too. At a July 15 meeting in Trinidad, changes such as reducing the membership to 11 were discussed.

Orcutt: In March, David Cottingham met with the 4 chairs of the Klamath advisory committees and agreed to look at what needed to be changed in the Trinity's authorization. On July 15, the California Salmon and Steelhead Advisory Committee met to look at variations that could be changed. There was no consensus to move forward with any specific recommendations. The Hoopa Tribe wants to get reauthorization on the table to start the discussions. The reauthorization will probably be reintroduced at the next session of Congress. The timeframe will be pretty tight.

Grover: This bill has been in DOI's Office of Legislative Counsel for two years. Sometimes, bills like these may get rolled up into omnibus bills (e.g. the Central Valley Project Improvement Act).

Fletcher: The draft reauthorization contains wording that would expand the area of concern from Weitchpec to the mouth of the Klamath. This was put in specifically to force coordination between the Klamath and Trinity groups.

Bitts: Ocean commercial fishermen support any restoration program that is cost effective and benefits commercial fishermen. My view of the Trinity Restoration Program is that it fails to meet both criteria.

McIsaac: There is no motion on the table for this discussion item. We acted on this topic two meetings ago.

New agenda item: July 29 fax

McIsaac: The fax received July 29 (Handout M) asks the TAT to perform an analysis of the economic benefits of a fully restored fishery. This is complicated, maybe Kautsky could get a better description of what they want from us in regards to this assignment before the TAT starts spending a lot of time on it. It might be a benefit to this Council to have a snappy number as to the value of a fully restored fishery. I think that this is worth pursuing, but I don't want it to come as a higher priority than our other technical chores.

- o Is there utility in other forums (e.g. cultural and social values) to know what the benefits to having a fully restored fishery is? We would need to have some kind of filter between what the Trinity River folks want and what we want.
- o Newspapers highlight the controversy of the commercial fishery seeing no benefit in a fully restored fishery. People are asking if the water should be sent south to agriculture instead.

Kautsky: If we scope this out with our counterparts in the Trinity Coordinating Committee, then wait until the Klamath Council reconvenes to get the assignment, it might be too late. The authorization for the Trinity may have already expired by then. The question is what is the benefit of a fully

restored fishery? What is a fully restored spawning escapement? On the low side, the Environmental Impact Statement (EIS) lays out 63,000; on the high side, the spawning escapements we had in the late 80's are cited as being desirable.

McIsaac: Our next meeting is in October. Congress recesses beginning in October, then will consider this reauthorization when they reconvene in January. The TAT can put together a 10-year average of a fully restored situation (with the sideboards discussed above). The value of a fully restored fishery could get complicated, due to the interplays with other stocks, but we look forward to hearing your report on this at our October meeting.

15. Marking of all hatchery fish

Grover: Congressman Hamburg has approached FWS with a proposal for \$4,000,000 to buy equipment for marking all hatchery fish. Since then the dollar amount has been reduced to \$560,000. The benefits are that a marked hatchery fish could be kept when caught in the ocean and an unmarked fish could be released. FWS is divided internally on this issue -- some staff believe that marking all hatchery fish is a good idea, others don't agree, and still others are in-between. The Service is noncommittal at this stage. One thing is clear, everyone needs to mark if anybody is going to mark. One of the things that has happened is that the Pacific Council, Pacific States Marine Fisheries Commission and the Bi-national Marine Commission have requested that this issue be addressed in a conference. A "Selective Fisheries Workshop" in late November in Vancouver has been planned to address this topic. Some of the issues that will be discussed by the forum of experts at this conference include using selective fisheries to conserve wild stocks and the coastwide impact of such a program. One of the other questions that will be asked is if we can develop a model to see what the effects would be of this type of marking program.

Bitts: I'm glad to hear that there will be a workshop to provide an arena for discussion of these topics. I'd also like to add more questions: what kind of mark will be used? (ad-clip won't work -- we can't recognize an ad-clipped fish in the water when we are trying to land it) and what happens to the incentive to work for restoration of wild fish if commercial fishermen can't keep them? I think that Kier supports this idea. The Pacific Coast Federation of Fishermen's Association (PCFFA) is divided on this issue. I don't know of any troller who supports a mass marking program.

Q: Has anyone commented on this proposal?

A: McIsaac: Other work of this type has been done: ODFW staff in Newport have done work on mass marking of coho hatchery fish, Pacific Salmon Commission has a workgroup detailing a lot of these questions, Washington Department of Fish and Wildlife has a prototype for coho in Puget Sound.

Boley: The alternative to mass marking could be no fishing. It is not correct to say that the troll industry opposes mass marking.

Boydston: CDFG has received the same letter asking for a response of support from Hamburg. We have told them about our concerns. There are a host of technical questions that need answers before any fish could be marked. People are responding in different ways: biologists are wary, politicians jump in, and fishermen waver on this topic. What are the legal requirements for forcing hatcheries to mark? The fish are mitigation fish -- they are paid for by agencies such as BOR. Who owns the fish? Who controls whether or not they are marked? There is also a public perception problem on this issue: what would preclude fishermen from removing a fin?

- o We should try to harness Congressman Hamburg's enthusiasm. He wants to do something right. The workshop is going to be an opportunity to learn more about marking. All steelhead from TRH are being marked.
- o The meeting will be in the Pacific Northwest, but the mass-marking proposals have been for southerly fisheries that won't affect U.S./Canada. Maybe the meeting should be moved down here.

\*\* Action: People who are interested in this issue should find out the dates when the meeting in Vancouver will occur.

- o One of the strongest arguments for marking is that it could allow ocean fishing to proceed (even if a stock gets listed). On the other hand, look at what happened to ocean fisheries this year as a result of the concerns about coho. If we apply the lesson from this year to the hatchery marking program, we need to ask if a hatchery marking program would really accomplish anything.

#### 17. Formalizing KFMC appointments

McIsaac: Some folks who are serving on this Council are formally appointed. Others are serving as appointed alternates. Those of you who are serving as unofficial alternates or unofficial representatives need to try to get your formal appointment made.

Bitts and Walters: The Governor of California needs to sign our appointments. We've been waiting for this to happen.

Boydston: I am not aware of any impediment in the governor's office to getting this done. I will recommend to the new director that he solicit names of the people that we would like to appoint to the Governor.

Bostwick: I received a note from his office that reappointed me.

Grover: Sometimes it is helpful to have the Secretary of Interior remind the governor to get this done.

Iverson: It might be worth tying this step into the second round of 4 year appointments -- due in 1995.

Q: What are the provisions for alternates on this Council?

A: Iverson: The Federal Advisory Committee Act does not provide any reference to alternates. I assume it wasn't taken into account that the possibility of alternates existed.

\*\* Action: Report from members at the October meeting on what they have done to get these appointments cleaned up.

16. Next meeting date, time and agenda items

October 20-21 in Redwood National Park, Hiouchi (near Crescent City). The meeting will begin at 10 am and the agenda items will include:

- o Retrospective on 1994 fisheries (Tribes, agencies)
- o Report on Klamath River flows/temperature
- o Sub-basin stock strength. Council discussion on correcting for low escapement in tributaries?
- o Inside:outside mixed stock fishery issue.
- o Should Klamath stocks receive more protection? [CDFG will develop document for discussion at the meeting (Boydston).]
- o Approve minutes of meetings held: March 1-2, March 7-8, April 4-5, May 23 and August 1.
- o Report from members on appointment status.

New agenda item: future meetings

February 22-24 Brookings:

- o Consider forecast
- o Build allocation recommendations
- o Review '94 fisheries

Note: The Pacific Council finishes stock projections by February 27.

Also, tentatively, March 1-2. Location to be announced.

3:30 pm ADJOURN

KLAMATH RIVER FISHERY MANAGEMENT COUNCIL  
August 1, 1994  
Portland, Oregon

Klamath Fishery Management Council members present:

David Bitts	Calif. Commercial Salmon Fishing Industry
Scott Boley	Pacific Fishery Management Council
Virginia Bostwick	Klamath In-River Sport Fishery
L. B. Boydston	Calif. Dept. of Fish and Game
(for Al Petrovich)	
Troy Fletcher	Non-Hoopa Indians Residing in the Klamath
Don McIsaac	Oregon Dept. of Fish and Wildlife
Mike Orcutt	Hoopa Valley Tribal Council
(for Pliny McCovey)	
Jerry Grover	U. S. Dept. of the Interior
(for Lisle Reed)	
Don Viele	National Marine Fisheries Service
(for Rod McInnis)	
Jim Walters	California Offshore Sport Fishery
Keith Wilkinson	Oregon Dept. of Fish and Wildlife

Attendees:

Judy Cunningham	United Anglers - Klamath Management Zone Chapter
Jim Craig	U. S. Fish and Wildlife Service - Arcata
John Hamilton	U. S. Fish and Wildlife Service - Yreka
Ron Iverson	U. S. Fish and Wildlife Service - Yreka
George Kautsky	Hoopa Valley Tribe
Patricia Parker	U. S. Fish and Wildlife Service - Yreka
Frank Warrens	Pacific Fisheries Management Council

Final Agenda  
Klamath Fishery Management Council  
August 1, 1994  
Columbia River Red Lion Inn, Portland, OR

10:00 am Convene

ADMINISTRATION

1. Introductions
2. Review and approve agenda
3. Approve minutes of meetings held: March 1-2, March 7-8, April 4-5, and May 23.

TECHNICAL REPORTS

- |       |  |
|-------|--|
| 10:30 | 4. Hoopa Tribe's presentation of their spawner deficit accounting proposal |
| 10:45 | 5. Council discussion of the spawner deficit accounting proposal           |
| 11:15 | 6. Report of the Technical Advisory Team (Barnes)                          |
| 11:30 | 7. Council discussion of the Technical Advisory Team's report              |
| 12:00 | 8. Public comment  |

Lunch

- |      |   |
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| 1:30 | 9. <u>Action</u> : Consider either sending the Hoopa Tribe's proposal to the Pacific Council or reporting to the Pacific Council on this group's discussions. |
|------|---|

OTHER REPORTS

- |      |  |
|------|--|
| 2:00 | 10. Retrospective on 1994 fisheries (Tribes, agencies)                         |
|      | 11. Report on responses to Shasta CRMP letter (Bitts, Fletcher)                |
|      | 12. Report on FY95 workplan approved by Klamath Task Force (Shake)             |
|      | 13. Report on comments received on draft letter to Robinson and Ryan (McIsaac) |

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HANDOUTS

- HANDOUT A: Corrections to minutes provided by the Yurok Tribe.
- HANDOUT B: Corrections to minutes provided by California Department of Fish and Game.
- HANDOUT C: KRTAT Report on Spawner Deficit Accounting by George Kautsky, dated July 15, 1994
- HANDOUT D: Exhibit G - Table 2: Comparison of spawner deficit accounting alternatives for Klamath River fall chinook
- HANDOUT E: Yurok Tribal Fisheries Program Memo dated July 25, 1994 regarding Spring Harvest Estimate for the Yurok Indian Reservation
- HANDOUT F: Letter to Blair Hart, Shasta River CRMP from Dave Bitts of the Humboldt Fishermen's Marketing Association dated March 2, 1994
- HANDOUT G: Letter to Blair Hart, Shasta River CRMP from the Yurok Tribe dated May 20, 1994
- HANDOUT H: Draft letter to Mark Robinson, FERC; and to Michael Ryan, USBOR; from the Klamath Fishery Management Council regarding Violation of Minimum Flow Requirements. Dated July 29, 1994.
- HANDOUT I: Letter and reports from Jim Craig of the U. S. Fish and Wildlife Service regarding 1994 salmonid emigration monitoring.
- HANDOUT J: Memo from Jim Craig to the Klamath Fishery Management Council dated August 19, 1994, regarding updated water temperature data for the Klamath River.
- HANDOUT K: Letter from Arnold Whitridge of the Technical Coordinating Committee of the Trinity River Task Force dated July 16, 1994 to Chairman McIsaac of the Klamath Fishery Management Council.
- HANDOUT L: Draft letter from Daniel Beard of the U. S. Bureau of Reclamation to Honorable Thomas S. Foley, Speaker of the House of Representatives. Dated June 23, 1994.
- HANDOUT M: Letter and attachment from Arnold Whitridge of the Technical Coordinating Committee of the Trinity River Task Force to Chairman McIsaac of the Klamath Fishery Management Council regarding request for analysis of benefits from restored Klamath-Trinity river fishery. Dated: July 29, 1994.

## INFORMATIONAL HANDOUTS

- #1            Final Draft Klamath River Fall Chinook Review Team Report: An Assessment of the Status of the Klamath River Fall Chinook Stock as Required Under the Salmon Fishery Management Plan. Dated June 1994
- #2            Letter from Fred Schutt, Chairman of the Klamath Management Zone Fisheries Coalition to the Pacific Fishery Management Council, regarding Proposed Deficit Accounting. Dated June 24, 1994.
- #3            Scientific and Statistical Committee Comments, Supplemental SSC Comments C.1 and E.2 dated August 1994.
- #4            Plan Amendment 12: Spawner Deficit Accounting for Klamath River Fall Chinook, Exhibit E.2, dated August 1994.
- #5            KRTAT Report on Spawner Deficit Accounting, Replacement for Attachment E.2.b. Dated August 1994.



**United States Department of the Interior**  
**FISH AND WILDLIFE SERVICE**

Coastal California Fishery Resource Office  
1125 16th Street, Room 209  
Arcata, CA 95521  
(707) 822-7201  
FAX (707) 822-8411

August 5, 1994

Memorandum

TO: Klamath Fishery Management Council

FROM: Fishery Biologist, Coastal California FRO  
Arcata, California

SUBJECT: Preliminary report on 1994 Klamath River salmonid  
emigration monitoring and report on Klamath Basin drought  
impacts on 1994 salmon production.

Attached are two reports as requested by Council during the KFMC meeting in Portland on August 1. Please contact me if you need further information or if you would like a copy of the final Klamath River outmigration report scheduled to be completed in October.

Sincerely,

A handwritten signature in dark ink, appearing to read "Jim L. Craig", is written over the typed name.

Jim L. Craig

Attachments

Preliminary Report  
Klamath River Juvenile Salmonid Emigration Monitoring  
Pulsed Flow Evaluation  
and  
Klamath Basin Drought Impacts 1994 Salmon Production

For further information contact:

Jim L. Craig  
Coastal California Fishery Resource Office  
1125 16th Street, Room 209  
Arcata, CA 95521  
(707) 822-7201

## Klamath River Juvenile Salmonid Emigration Monitoring Pulsed Flow Evaluation - Preliminary Results

### BACKGROUND

Recent and past winter conditions in the Klamath River Basin have not been adequate to supply sufficient water to meet demands for endangered species, fisheries, and agricultural needs. Without sufficient storage, water discharges from Iron Gate Dam were occasionally reduced below Federal Energy Regulatory Commission's minimum release levels. Concerns were raised about the effects these diminished flows might have on juvenile salmon especially during their downstream migrations. In response, the Bureau of Reclamation (BOR) provided several pulse flow releases during the spring migration period and supplemental funding for monitoring of these salmonid migrations.

From May through early July, the U.S. Fish and Wildlife Service (FWS), in cooperation with the U.S. Forest Service (USFS) and Karuk Tribe of California operated three rotary traps in the Klamath River for the purpose of gathering baseline salmonid emigration information, and to monitor the effects of pulsed flows on salmonid emigration. The FWS Coastal California Fishery Resource Office (CCFRO) provided rotary traps, sampling equipment, and program direction for these efforts. The rotary traps were operated continuously, seven days per week. The uppermost trap, hereinafter referred to as the Scott River trap (Figure 1), was operated by USFS personnel; the middle trap at the Persido Bar site and the lowermost trap at the Big Bar site were operated jointly by the Karuk Tribe and CCFRO.

The BOR has provided hydro-lab units which have been placed in the Klamath River to monitor water temperature, dissolved oxygen, pH, and conductivity levels. These units were placed below Iron Gate Dam, above the Scott River confluence, and just above Ishi-Pishi Falls. Temperature monitoring devices were also installed on, or immediately adjacent to, the Scott River and Big Bar rotary traps. Data from these monitoring recorders have not been downloaded yet. All river temperature data referenced in this report were taken with hand-held thermometers.

### PROJECT OBJECTIVES

1. Monitor the emigration of natural stock juvenile salmonids from the Klamath River, downstream of Iron Gate Dam.
2. Monitor the emigration of juvenile salmonids released from Iron Gate Hatchery.
3. Monitor the influences of pulsed flow releases from Iron Gate Dam on the emigration of natural and hatchery stock juvenile salmonids.
4. Determine migration time of natural and hatchery chinook salmon, through pan-jet marking of natural chinook salmon and by evaluation of coded wire tagged hatchery chinook.
5. Determine relative abundance of natural and hatchery chinook salmon based on analyses of coded wire tag data.

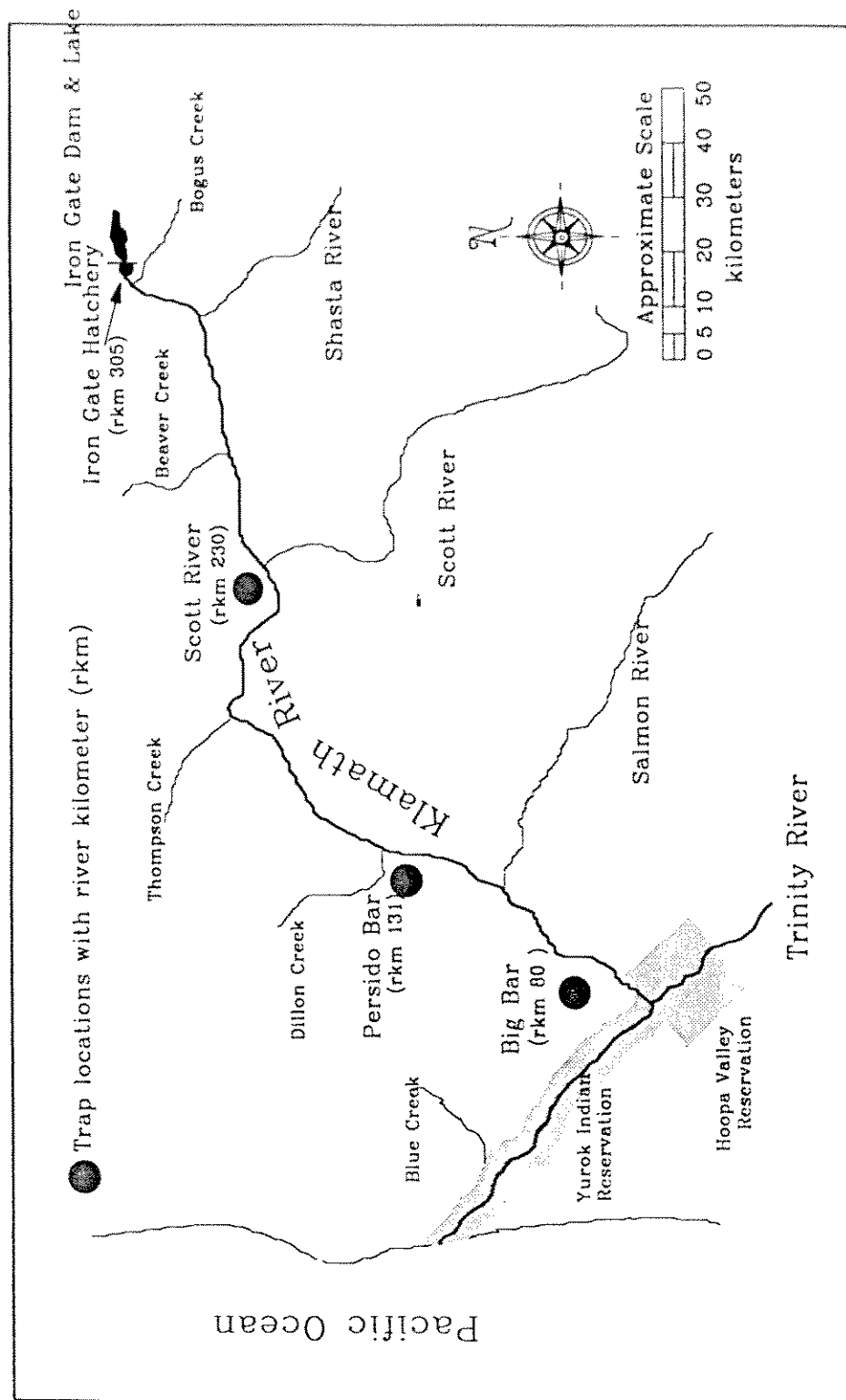


Figure 1. Monitoring locations on the Klamath River.

## METHODS

Rotary screw traps were installed in the Klamath River, below the confluence of the Scott River with the Klamath River (Scott River site), at Persido Bar access, and at Big Bar access. The traps were operated seven days per week continuously unless noted otherwise. When catches were low the traps were checked once per day. As catches increased the frequency of trap checks increased accordingly. During the periods of highest catches, the traps were checked continuously and counts were made nearly hourly. A catch date represents fish captured during a 24 hour period from approximately noon the previous day to approximately noon of the catch date. Starting July 1 in response to high water temperatures and to minimize stress to captured fish, trapping was conducted during evening hours (1900 to 0700 hrs) only when water temperatures were cooler. All fish captured were identified and counted by species, age class, and examined for fin clips. A sub-sample of 30 fish of each species and age class are measured for length daily.

At the Scott River site and preceding hatchery releases, part of the juvenile chinook catch was marked with a biological dye agent, using a "pan-jet" injection device. To allow temporal distinction over time, the dye was injected in different areas of the caudal fin (e.g.) upper lobe, middle lobe, lower lobe, and combined locations, on a weekly basis (marking occurred Wednesday to Friday). These marked natural stock fish were subject to capture in the Persido and Big Bar rotary traps. In addition, the California Department of Fish and Game's (CDFG) Arcata office was kept apprised of all marking data for inclusion in their Klamath River estuary sampling studies.

## RESULTS

As of July 10, all trapping operations concluded. Catch numbers reported herein are to July 10 unless noted and are to be considered preliminary. To expedite the distribution of this report, I have not updated tables or figures with data collected after June 30. After June 30, catches of juvenile chinook at the Scott River and Big Bar traps generally declined. The figures of river flow and temperature, attached to the end of this report, include data for most of July.

### Scott River Site

USFS Oak Knoll Ranger District personnel began operation of this trap on May 4, 1994. This site is located at river kilometer (rkm) 230, immediately downstream from the confluence of the Scott River with the Klamath River. This trap is 75 rkm (46.7 miles) downstream of Iron Gate Hatchery (rkm 305.2).

The Scott River trap operated continuously starting May 4 except for one 24 hour period (June 7) when it was pulled for repair and on July 4 when crews were needed for fire duty. Starting June 30, the trap was operated during evening hours only (approximately 1900 hour to 0700 hour). This reduction in effort is necessary to reduce potential stress to captured fish brought on by increasing water temperatures. Starting in late June, water temperatures in the Klamath River reached 76 degrees fahrenheit during daytime hours. This reduction in trapping effort will not significantly compromise catch comparisons as

daytime (0700 hour to 1900 hour) catches have been on average less than ten percent of the overall 24 hour catch total. Expansions of catch to account for this reduction in trapping effort will be conducted at a later date.

For the season (May 4 to July 9), the Scott River rotary trap captured the 332,660 chinook (including 7,653 adipose fin clipped (AD clipped) chinook), 875 steelhead, and 296 coho. The greatest single day catch (51,998) of chinook was made on June 17 (Table 1).

The higher catches at the Scott River trap, relative to other traps, are attributed to the site's excellent physical characteristics and the greater proportion of total river flow sampled relative to the other two downstream sites. A chinook production index, based on catches and percent of river flow sampled, has not been computed yet. The index provides for more reliable comparison of production between trap sites and between years for individual traps.

#### Persido Bar Site

The FWS and Karuk Tribe began operation of this trap on May 9, 1994. Persido Bar is at rkm 131. The trap was pulled for the season after sampling the June 30 catch.

For the season, the rotary trap at Persido Bar captured 150,752 (2,817 AD clipped) chinook salmon, 1,150 steelhead, and 188 coho salmon (Table 1). The greatest single day chinook catch was 13,165 on June 19. This trap was pulled on July 1 to facilitate continuous nighttime operation of the Big Bar rotary trap.

#### Big Bar Site

The Big Bar trap site is located at rkm 80. The FWS has been trapping at this area since 1988. Trapping has been conducted with a rotary trap starting in 1989. This year, the rotary trap was installed on February 19. Catches of salmonids at the Big Bar trap have been lower than its upstream counterparts due to the higher flow levels at Big Bar and the lower proportion of total flow sampled at this site. Trapping concluded on July 10 after sampling the July 9 catch.

From May 1 to July 10, the Big Bar trap captured 54,668 (427 AD clipped) chinook, 196 steelhead trout, and 60 coho salmon (Table 1). The highest single day catch (6,485) of chinook was on June 20. Starting June 30, the trap operated during night hours only when water temperatures are coolest.

#### Pulsed Flow Releases

The first pulsed flow release was on May 9-10, the second release was May 23-24, the third on June 6-7, and the final release occurred on June 16-17.

After the first pulsed flow release, catch numbers at Scott Bar did not appear to increase (Figure 2). However, the effect of the pulse flow on catches was compounded by a

Table 1. 1994 Juvenile Chinook Rotary Trap Catch Totals for Scott River, Presido Bar, and Big Bar. (Shaded areas indicate dates of pulsed-flow releases) NC = non clipped, AD = adipose fin clipped.

Month	Day	Scott River			Presido Bar			Big Bar			Total		
		NC	AD	%AD	NC	AD	%AD	NC	AD	%AD	NC	AD	%AD
May	1							29	0	0.00	29	0	0.00
	2							36	0	0.00	36	0	0.00
	3							48	0	0.00	48	0	0.00
	4							46	1	2.13	46	1	2.13
	5	2331	0	0.00				63	1	1.56	2394	1	0.04
	6	2694	0	0.00				49	2	3.92	2743	2	0.07
	7	1084	0	0.00				34	1	2.86	1118	1	0.09
	8	1037	0	0.00				45	0	0.00	1082	0	0.00
	9	595	0	0.00				41	0	0.00	636	0	0.00
	10	739	0	0.00	204	0	0.00	49	0	0.00	992	0	0.00
	11	586	0	0.00	267	0	0.00	68	0	0.00	921	0	0.00
	12	748	0	0.00	112	0	0.00	62	0	0.00	922	0	0.00
	13	545	0	0.00	133	0	0.00	70	0	0.00	748	0	0.00
	14	750	0	0.00	130	0	0.00	46	0	0.00	926	0	0.00
	15	1185	0	0.00	202	0	0.00	75	0	0.00	1462	0	0.00
	16	812	0	0.00	67	0	0.00	49	0	0.00	928	0	0.00
	17	738	0	0.00	41	0	0.00	35	0	0.00	814	0	0.00
	18	594	0	0.00	68	0	0.00	38	0	0.00	700	0	0.00
	19	669	0	0.00	30	0	0.00	31	0	0.00	730	0	0.00
	20	567	0	0.00	47	0	0.00	34	1	2.86	648	1	0.15
	21	661	0	0.00	44	0	0.00	41	0	0.00	746	0	0.00
	22	721	0	0.00	76	0	0.00	64	0	0.00	861	0	0.00
	23	595	0	0.00	117	0	0.00	69	0	0.00	781	0	0.00
	24	1097	0	0.00	278	0	0.00	79	0	0.00	1454	0	0.00
	25	1278	0	0.00	659	0	0.00	175	0	0.00	2112	0	0.00
	26	940	0	0.00	958	0	0.00	607	0	0.00	2505	0	0.00
	27	721	0	0.00	864	0	0.00	499	0	0.00	2084	0	0.00
	28	882	0	0.00	474	0	0.00	513	2	0.39	1869	2	0.11
	29	946	0	0.00	412	0	0.00	265	0	0.00	1623	0	0.00
	30	1251	0	0.00	434	0	0.00	325	0	0.00	2010	0	0.00
	31	1329	0	0.00	563	0	0.00	No Trapping			1892	0	0.00
June	1	746	0	0.00	860	0	0.00	303	0	0.00	1909	0	0.00
	2	1735	0	0.00	1307	0	0.00	1652	0	0.00	4694	0	0.00
	3	3071	0	0.00	1537	0	0.00	1187	0	0.00	5795	0	0.00
	4	2679	0	0.00	1012	0	0.00	1012	0	0.00	4703	0	0.00
	5	6118	0	0.00	1179	0	0.00	1563	0	0.00	8860	0	0.00
	6	2636	0	0.00	572	0	0.00	718	0	0.00	3926	0	0.00
	7	No Trapping			531	0	0.00	1125	0	0.00	1656	0	0.00
	8	3535	0	0.00	253	0	0.00	1056	3	0.28	4844	3	0.06
	9	1322	0	0.00	387	1	0.26	857	0	0.00	2566	1	0.04
	10	5064	0	0.00	1340	0	0.00	1354	0	0.00	7758	0	0.00
	11	6990	0	0.00	2836	0	0.00	2323	0	0.00	12149	0	0.00
	12	7802	0	0.00	2470	0	0.00	2002	0	0.00	12274	0	0.00
	13	2749	0	0.00	1904	0	0.00	1122	0	0.00	5775	0	0.00
	14	3636	0	0.00	893	0	0.00	557	0	0.00	5086	0	0.00
	15	1207	0	0.00	501	0	0.00	443	3	0.67	2151	3	0.14
	16	8849	0	0.00	421	0	0.00	210	0	0.00	9480	0	0.00
	17	50390	1608	3.09	1032	0	0.00	379	0	0.00	51801	1608	3.01
	18	30936	816	2.57	1806	0	0.00	583	0	0.00	33325	816	2.39
	19	10593	384	3.50	13101	64	0.49	1352	0	0.00	25046	448	1.76
	20	11795	465	3.79	7972	156	1.92	6477	8	0.12	26244	629	2.34
	21	34027	1505	4.24	9423	179	1.86	4014	21	0.52	47464	1705	3.47
	22	12479	509	3.92	10768	239	2.17	1160	9	0.77	24407	757	3.01
	23	10134	508	4.77	10374	384	3.57	809	11	1.34	21317	903	4.06
	24	7104	245	3.33	9567	276	2.80	407	2	0.49	17078	523	2.97
	25	10812	320	2.87	9261	268	2.81	509	11	2.12	20582	599	2.83
	26	9701	374	3.71	8623	207	2.34	614	6	0.97	18938	587	3.01
	27	9151	193	2.07	10201	281	2.68	1049	11	1.04	20401	485	2.32
	28	8145	153	1.84	12283	339	2.69	1105	18	1.60	21533	510	2.31
	29	9831	320	3.15	8486	243	2.78	1521	35	2.25	19838	598	2.93
	30	6380	253	3.81	10852	180	1.63	No Trapping			17412	433	2.43
	1	Data unavailable			Trapping Ceased			5405	95	1.73	5405	95	1.73
		305712	7653	2.44	147932	2817	1.87	46453	241	0.52	500277	10711	2.10

# Scott River

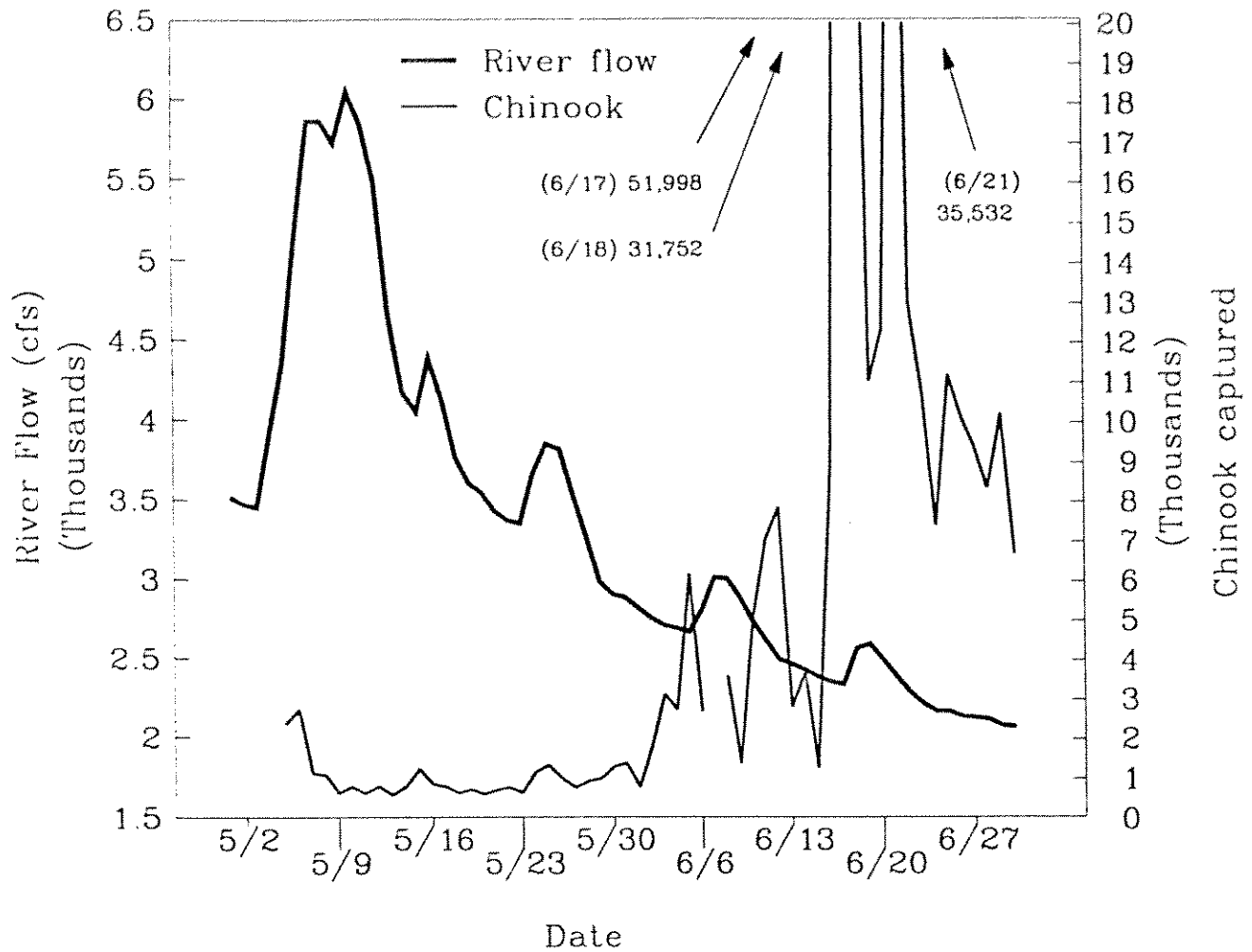


Figure 2. Klamath river flow at Orleans and chinook catch at the Scott River rotary trap, May 01 to June 30, 1994

substantial flow increase from heavy rains which preceded the pulse flow. Catches were higher during the "natural" flow event and were decreasing at the time the pulsed flows were initiated. The Persido Bar trap began operation on May 9 so minimal pre-pulsed flow catch data were available. However, similar to the Scott River trap results, catches were decreasing by the time the effect of the pulsed flows were observed at the trap site (Figure 3). Chinook catch numbers did increase slightly at the Big Bar site, for a few days after the pulsed flow release (Figure 4).

During the second pulsed flow, chinook catch numbers nearly doubled at the Scott River trap (Figure 2). Catch numbers at the Persido and Big Bar sites also increased more substantially during the effects of the second pulsed flow event (Figure 3 and 4).

After the third pulsed release, chinook catch numbers increased substantially at all three sites, although, prior to this release, catch numbers were already increasing.

The most dramatic catch increases at all traps occurred after the simultaneous hatchery chinook release and the final pulsed flow release of June 16-17.

#### IGH Release of June 14-16:

The release of juvenile chinook from Iron Gate Hatchery (IGH) occurred on the afternoons of June 14 to 16. Approximately 1.6 million (M) chinook were released on June 14, 2.2M on June 15, and 1.2M on June 16 (total release 4.96M). Only the June 15 release included AD clipped coded wire tagged chinook ( $n = 201,000$ ). Immediately following the chinook releases from IGH, considerable predation from birds upon the released fish was observed. On June 16, in an effort to alleviate the predation problem, BOR initiated the final pulsed flow release, originally scheduled for June 20-21.

Chinook salmon from the June 14 release may have began to appear at the Scott River trap early the morning of June 16. Whether the substantial catch increase observed on June 16 was comprised of hatchery chinook cannot be confirmed as AD clipped chinook were not observed in catches. Catches at the Scott River trap reached 51,998 chinook on June 17. This season high daily catch began to arrive at the trap at approximately 0300 hour (hr) on June 17 and did consist of AD clipped chinook. The catch dropped to 31,752 by June 18 and may be indicative of the final, relatively smaller, hatchery release. Based on the June 17 catch of AD clipped chinook, and assuming a mean release time of 1800 hr (June 15) and a mean capture time of 0600 hr (June 17), these hatchery chinook traveled the 75 river kilometers in approximately 36 hours, or 50 rkm's per day (31 miles per day).

This initial "wave" of hatchery fish may have began to arrive at Persido Bar trap on June 17 as indicated by the substantial catch increase (Figure 3). By June 19, the catch of chinook, including the first recoveries of AD clipped chinook, peaked at 13,165. Based on the same assumption of mean release time for AD clipped chinook (1800 hr, June 15) and a mean capture time of 0600 hr (June 19), these marked hatchery chinook traveled the 174 rkm in approximately 84 hours, or 50 rkm's per day.

The Big Bar trap began to capture the "wave" of chinook on June 19 (1,352) as indicated by the substantial catch increase (Figure 4). On June 20, a season high catch of 6,485

## Presido Bar

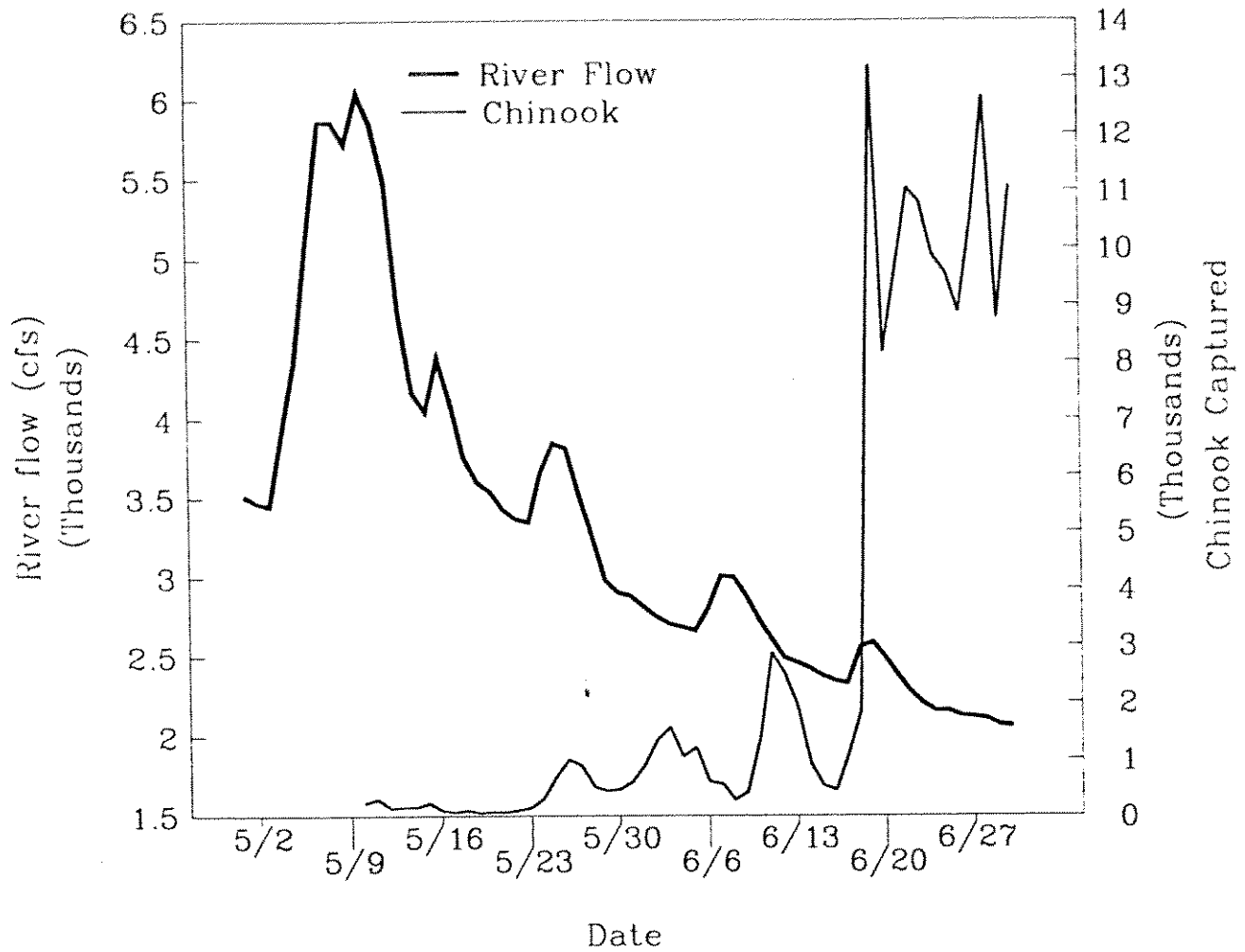


Figure 3. Klamath River flow at Orleans and chinook catch at the Presido Bar rotary trap, May 01 to June 30, 1994.

## Big Bar

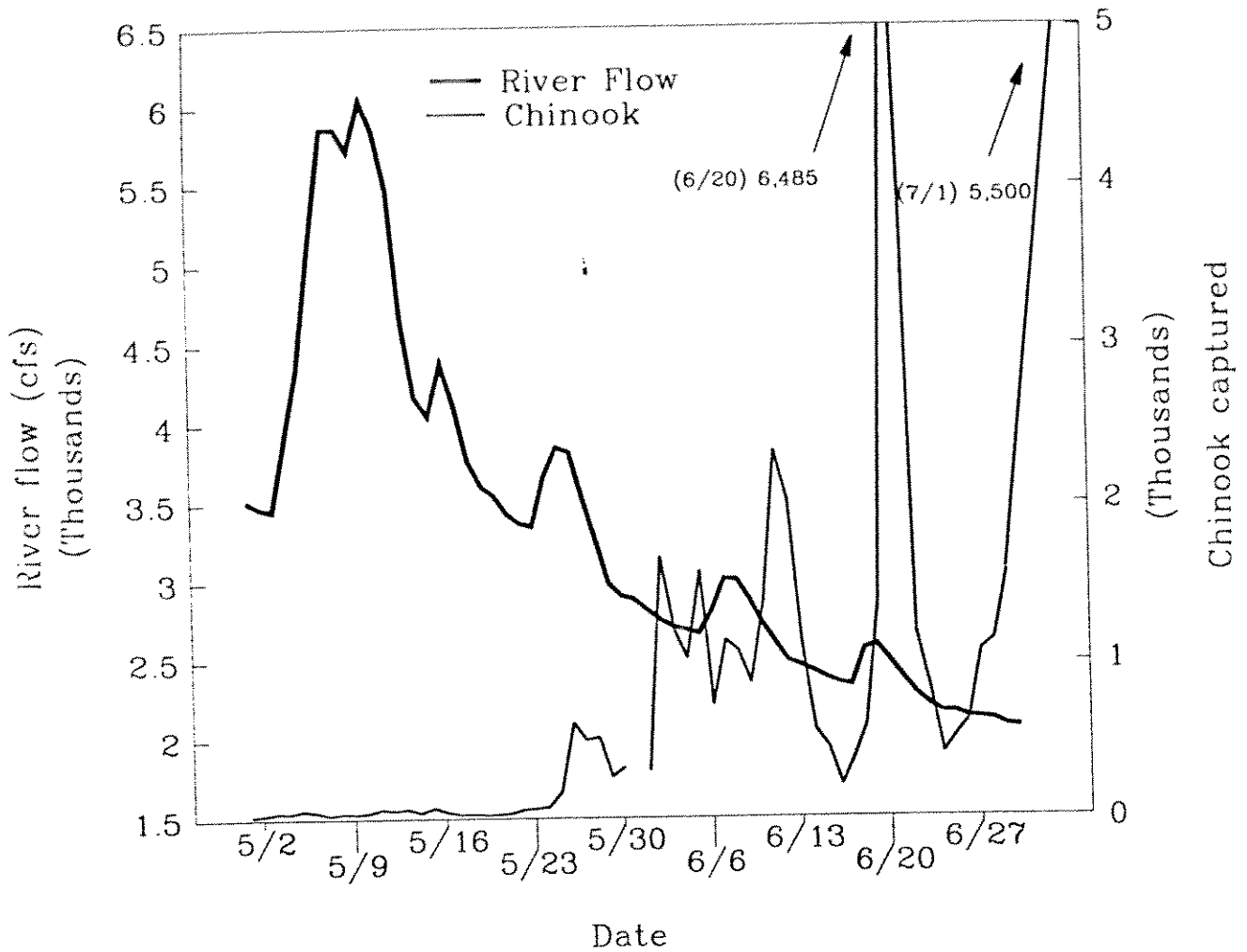


Figure 4. Klamath River flow at Orleans and chinook catch at the Big Bar rotary trap, May 01 to July 01, 1994.

chinook was observed which included the first recoveries of AD clipped chinook. Using the same release time assumption and a capture time of 0600 hr (June 20), the hatchery chinook, represented by the AD clipped fish, traveled the 225 rkm's between Iron Gate Hatchery and Big Bar in about 108 hours, also a rate of 50 rkm's per day.

The initial migration rates for IGH released fingerling chinook during 1989 (20 rkm/day), 1991 (9 rkm/day), and 1992 (30 rkm/day) were substantially lower than observed in 1994. The increased rate of migration observed in 1994 indicates that the pulse flow of June 16 benefitted hatchery chinook by decreasing travel time. Reduced travel time has been shown to increase survival by decreasing the amount of time fish are subject to in-river predation, disease, and stress and/or mortality brought on by increasing temperatures of the river.

As data analysis continues in 1994 and reading of the collected coded wire tags is accomplished, more detailed assessment of migration rates will be possible for each of the five coded wire tag groups released in 1994. At that time, other considerations such as size at release, river flow, and temperature will be assessed and compared to previous years.

#### Pan-Jet Marking

Marking of chinook was conducted before hatchery releases to determine migration characteristics of natural stock chinook. A total of 8,113 chinook were Pan-Jet marked and released. Based on recoveries at the Presido and Big Bar traps, the mean migration rate ranged from 7.4 rkm/day to 26.4 rkm/day (4.6 to 16.4 river miles/day). The fastest individual fish traveled at a rate of 33.0 rkm/day (20.5 miles/day). The Pan-jet marking results will require careful consideration, as the number of recaptures were limited (13 reliable recaptures). The nature of the markings requires experienced individuals to discern the markings, preferably those which have been involved in application of the marks. Personnel from the CDFG Klamath River estuary study have also reported several recaptures of these marked chinook during June. Data from these observations have yet to be included in any analysis of natural stock migration characteristics.

#### Hatchery and Natural Component

Prior to the recovery of AD clipped chinook, all captured chinook are assumed to be of natural origin except for the few yearling AD clipped chinook captured. Estimates of hatchery and natural stock component to catches following the hatchery release are compromised slightly since the initial (June 14) and final (June 16) release of hatchery chinook did not include any marked fish. However, as time and distance between the release and capture location increase, the probability of thorough mixing of the three release groups increases thereby minimizing the potential bias of the non marked hatchery groups.

Multiplying the number of AD clipped chinook observed in catches by the overall marking expansion factor of 24.5 (calculated by dividing the total number of fish released by the total number marked), results in an estimated hatchery component of 82.4% for the Scott River trap for catches made between June 17 and June 30 (Table 2). During this time,

Table 2. Number of non-clipped (NC), adipose fin clipped (AD), and estimated percent of hatchery and natural stock chinook in catches at the Scott River, Presido Bar, and Big Bar traps by day, June 17 to July 1, 1994.

Month	Day	Scott River				Presido Bar				Big Bar			
		Estimated				Estimated				Estimated			
		NC	AD	<sup>1</sup> Hatchery (%)	Natural (%)	NC	AD	<sup>1</sup> Hatchery (%)	Natural (%)	NC	AD	<sup>1</sup> Hatchery (%)	Natural (%)
June	17	50390	1608	76.3	23.7	1032	0	0.0	100.0	379	0	0.0	100.0
	18	30936	816	63.4	36.6	1806	0	0.0	100.0	583	0	0.0	100.0
	19	10593	384	86.3	13.7	13101	64	12.0	88.0	1352	0	0.0	100.0
	20	11795	465	93.5	6.5	7972	156	47.3	52.7	6477	8	3.0	97.0
	21	34027	1505	104.4	-4.4	9423	179	46.0	54.0	4014	21	12.8	87.2
	22	12479	509	96.6	3.4	10768	239	53.5	46.5	1160	9	19.0	81.0
	23	10134	508	117.7	-17.7	10374	384	88.0	12.0	809	11	33.1	66.9
	24	7104	245	82.2	17.8	9567	276	69.1	30.9	407	2	12.1	87.9
	25	10812	320	70.9	29.1	9261	268	69.3	30.7	509	11	52.2	47.8
	26	9701	374	91.5	8.5	8623	207	57.8	42.2	614	6	23.9	76.1
	27	9151	193	50.9	49.1	10201	281	66.1	33.9	1049	11	25.6	74.4
	28	8145	153	45.5	54.5	12283	339	66.2	33.8	1105	18	39.5	60.5
July	29	9831	320	77.7	22.3	8486	243	68.6	31.4	1521	35	55.5	44.5
	30	6380	253	94.1	5.9	10852	180	40.2	59.8	No Trapping			
	1	Data unavailable				Trapping Ceased				5405	95	42.6	57.4
Totals		221478	7653	82.4	17.6	123749	2816	54.9	45.1	25384	227	21.9	78.1

Estimated hatchery component of catch based on marking rate at hatchery and number of recovered AD clipped chinook.

the daily component of hatchery chinook in catches ranged from 46 to 118%. As migrations of both hatchery and natural chinook proceed downriver, the relative percent of hatchery chinook in trap catches decreased to 55% at the Presido Bar trap and 22% at the Big Bar trap. Several explanations for this observed decrease in the hatchery component of catches are possible and include, but are not limited to, the immigration of natural stock chinook into migrating populations, higher mortality of hatchery than natural stock chinook, and differentially higher mortality of marked chinook than non marked hatchery chinook.

## DISCUSSION

This project has collected considerable information which will require further evaluation. The results presented in this summary report are preliminary, and should not be viewed as definitive. We need to assess the results of the coded wire tag analyses by individually tagged group, and the results of our jet-injection dye marking. We need to recover and examine water temperature data and determine how this variable relates to the trapping results.

### Pulsed Flow Releases

Magnitude of juvenile salmon migration in May, as indicated by catches at the Scott River and Presido Bar, was minimal but did show occasional peaks, roughly corresponding with increased river discharge. These flow increases were the result of rainfall events and/or pulsed flow releases from Iron Gate Dam. There were three periods where catches of natural stock chinook peaked: the first occurred in latter May, the next occurred the first week in June, with the final non-hatchery influenced peak starting approximately June 10. While downstream movement of fish, as indicated by increased trap catches, appears to coincide to the timing of increased flows, the relationship must be viewed cautiously.

Size of chinook, along with other variables such as photoperiod, streamflows, water temperatures, and density-dependent factors, influence the migratory behavior of juvenile chinook and other salmonid species. It is further suggested that until fish reach appropriate physiological development or "readiness" to migrate, increased or pulsed flow events may do little other than displace fish downstream. During previous years of juvenile chinook monitoring in the Klamath basin, mean fork length of chinook measured during the period of highest catches (reflecting peak migration) typically exceeded 70mm. As indicated in Figure 5, mean fork mean length of chinook captured at the Scott River trap increased throughout May until attaining this approximate length late in the month at about which time catches begin their most substantial increases of the season. Size, or length of chinook then, may be a significant and easily measured indicator of such readiness and may serve to provide water managers and biologist a gauge to how best use pulsed flows to assist migrations.

Following the hatchery releases and onset of the final pulse flow event, catches reached season highs at all three traps. Trap catches following this peak decreased most significantly and abruptly at the Scott River trap. This might be expected given the relatively short distance between trap and hatchery and likelihood of the fish migrating in mass. Catches at the two other traps remained relatively high and somewhat variable

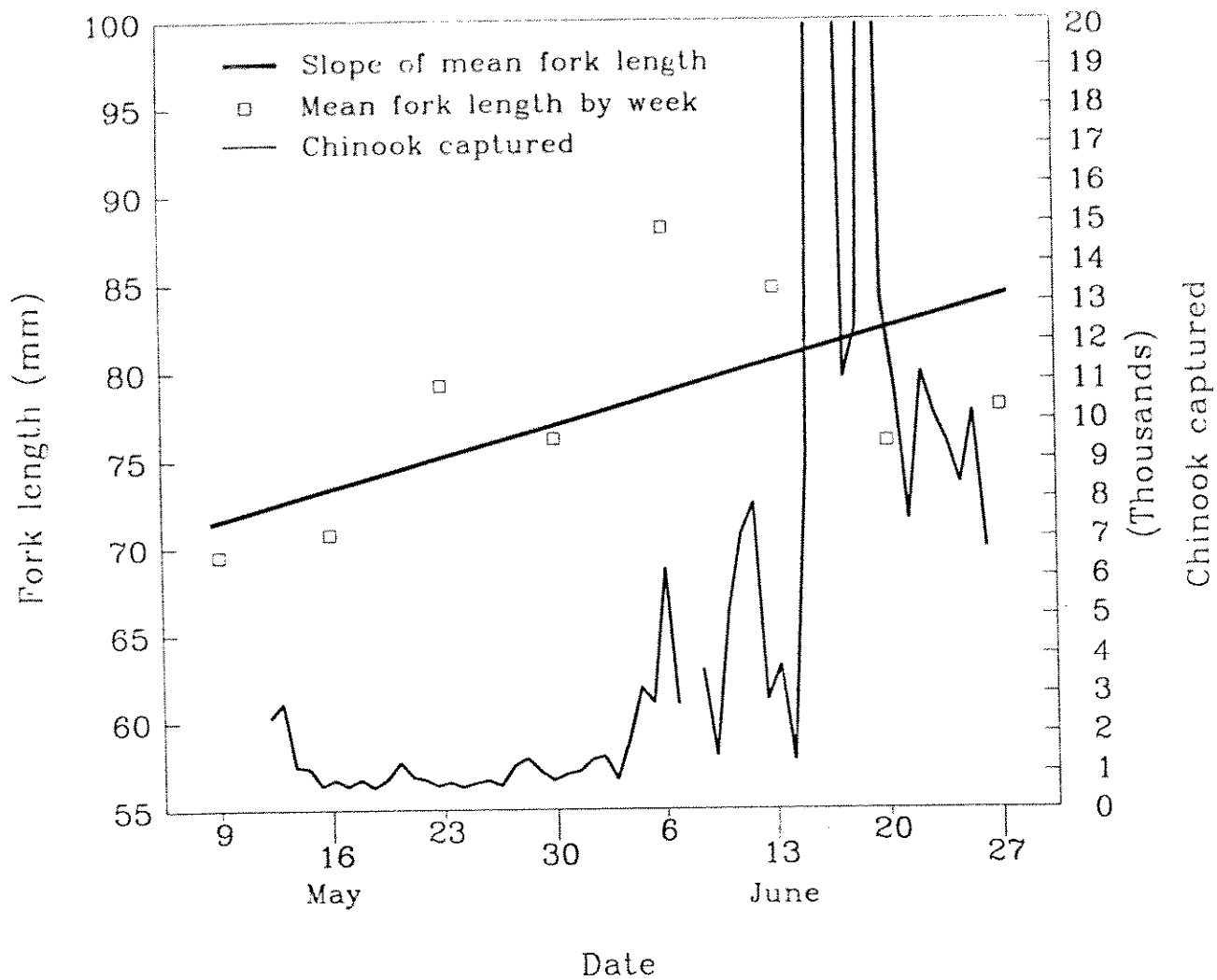


Figure 5. Number of chinook captured daily (24 hour period) and mean weekly fork length of sampled catch for the Scott River rotary trap, May 7 to June 30, 1994. Length data represents chinook sampled on Monday and Tuesday of each week.

through June. The release of nearly five million hatchery chinook would surely have resulted in season high catches at all traps regardless of any coincidental pulsed flow event. However, the benefit of this last flow release is suggested by the vastly increased migration rates observed for this years hatchery released chinook.

Data collected during this project indicates late May through June to have been the principal period of juvenile chinook migration. This observation is consistent with data collected in previous years by this office at traps located at Big Bar, Willow Creek (mainstem Trinity River), Blue Creek (tributary to the lower Klamath River), and at New River (tributary to Trinity River).

It also appears that production from the 1993 brood may be higher than recent years. In 1994, chinook catches at the Big Bar trap (54,668) far exceed any season total observed for the years 1989 to 1993 (average about 5,600, previous season high of 9,024).

#### Pan-jet Marking

Although the technique is promising, this initial attempt to mark fish using the Pan-jet injector needs improvement. The greatest deficiency in the use of Pan-jet marker has been low recapture numbers at the downstream traps and problems in accurately detecting the mark. Methods to improve the marking technique have been identified and will be incorporated in any future marking activities. Alternate methods of marking are also under consideration.

#### Mortalities

The three traps captured a total of 538,080 chinook salmon which includes 9,645 mortalities, constituting a 1.8% mortality rate. The individual mortality rates for the Scott River, Persido Bar, and Big Bar traps are 1.9%, 1.1%, and 3.2%, respectively. The rotary traps, as with most traps, capture both live and dead fish. The mortality counts included dead and dying fish that entered the traps, and expired. Mortality experienced during May was attributed primarily to occasionally high debris loads in the traps. Mortality which occurred during June is believed to be a result of high water temperatures. The change in July to trapping during evening hours only and constant monitoring of catch was successful at reducing mortality rates from that observed in late June.

#### **TENTATIVE CONCLUSIONS**

During the first month of monitoring, the trap catches were all variable, although catches tended to mimic the river flow hydrograph. For all three traps, the chinook catch began to increase dramatically in late May, and continued into June. The timing of migration was similar to that observed in other years.

Our results would suggest that the size of the chinook salmon is a significant determinant of the onset of migration. The influences of water temperature, photoperiod, lunar phase, fish densities, and river flow patterns need to be also taken into consideration. The earlier (May) pulsed flows appear to disperse fish downstream, indicated by the minor catch

peaks. Trap catches increased substantially, apparently only after fish obtained proper physiological development, as indicated by mean length. Pulsed flows during this time seemed to further enhance the migratory behavior of salmonids.

The final pulsed flow of June 16-17 occurred during and after the IGH release of nearly five million juvenile chinook. This pulsed flow release appeared to have a dramatic effect in increasing the rate of migration.

The pulsed flows may appear to offer the greatest benefits to emigrating chinook salmon if the flow releases occur during times when salmon emigration numbers are substantially increasing, and when they attain a mean size of 75 to 80 mm. By monitoring both the magnitude of emigration and mean length of juvenile salmon, it may be possible to determine when pulsed flow releases would have the greatest benefit to juvenile chinook.

## Klamath Basin Drought Impacts 1994 Salmon Production

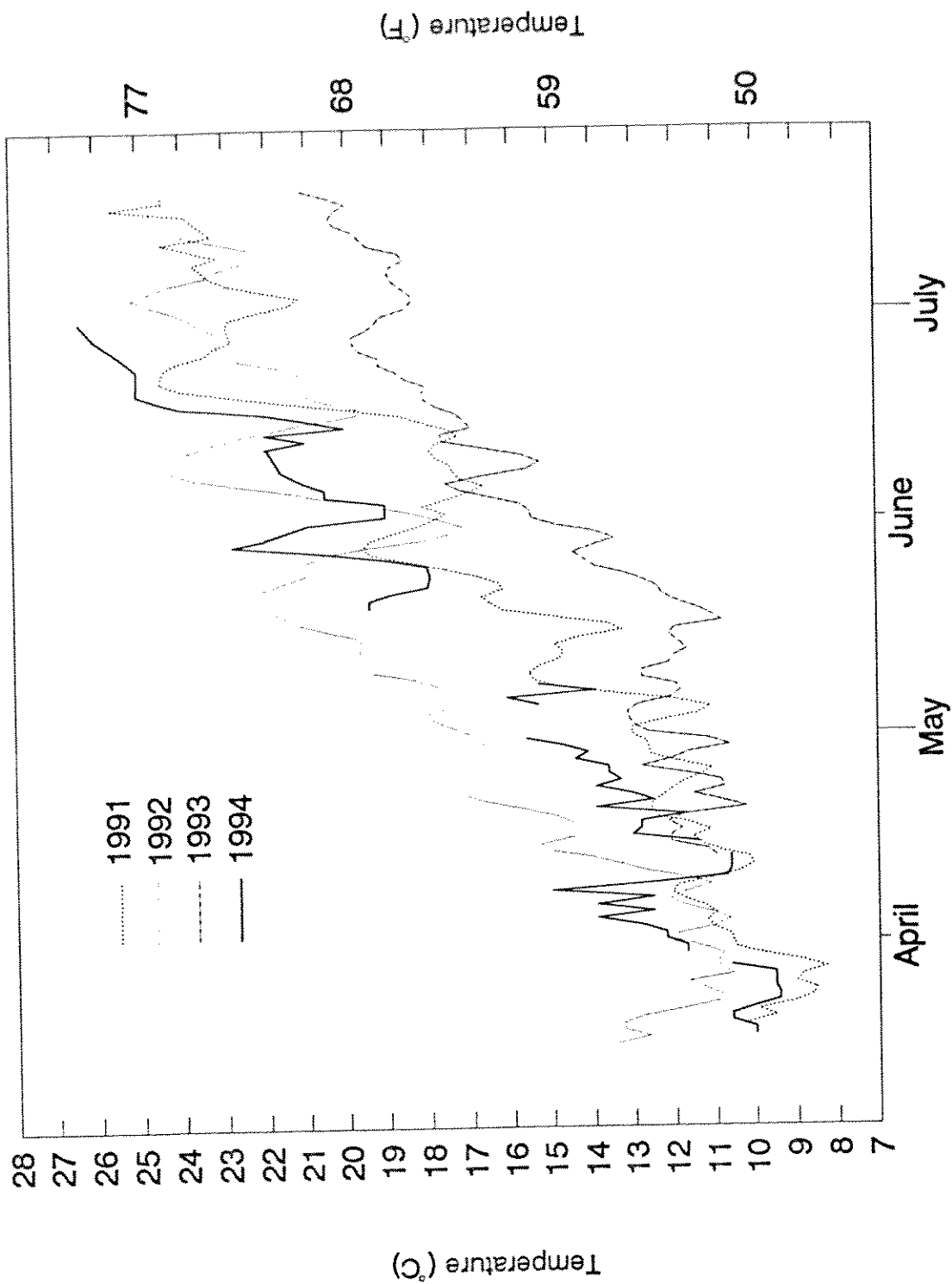
Recent and past winter conditions in the Klamath River Basin have not been adequate to supply sufficient water to meet demands for endangered species, fisheries, and agriculture needs. Water discharges have been reduced below Federal Energy Regulatory Commission minimum levels downstream of Iron Gate Dam in order to supply water to competing interests. Concerns were raised about the effects these diminished flows might have on juvenile salmon especially during their downstream migrations. The Bureau of Reclamation provided several pulse flow releases during the spring migration period and additional funding for increased monitoring of these salmonid migrations.

From May through early July, the U.S. Fish and Wildlife Service (FWS), in cooperation with the U.S. Forest Service and Karuk Tribe of California operated three rotary traps in the Klamath River. The traps were located near the Scott River confluence, at Persido Bar (near Happy Camp, CA), and at Big Bar (near Orleans, CA). Previous to 1994, only the Big Bar site had been utilized to monitor salmon migrations using the rotary trap. On a positive note, a relatively high level of production and/or survival for juvenile chinook in 1994 is indicated as catches at the Big Bar trap were approximately nine times greater than the average season since 1989 when monitoring began.

However, there are indications that portions of this years chinook production may have been lost. Unfortunately, since total production is not estimated and total mortalities are unknown, no reliable estimate of percent mortality can be generated. Beginning in early July, FWS personnel observed juvenile chinook mortalities in the lower 30 miles of the Klamath River and additional chinook were observed to be severely stressed and close to dying. Reports of dead and dying juvenile fish were also received from other river users. During snorkeling activities, FWS personnel also observed high densities of juvenile chinook at the mouths of tributaries where they were apparently taking refuge in the cooler incoming waters. Although trap catches were declining by this time, the data indicates that migrations were still significant.

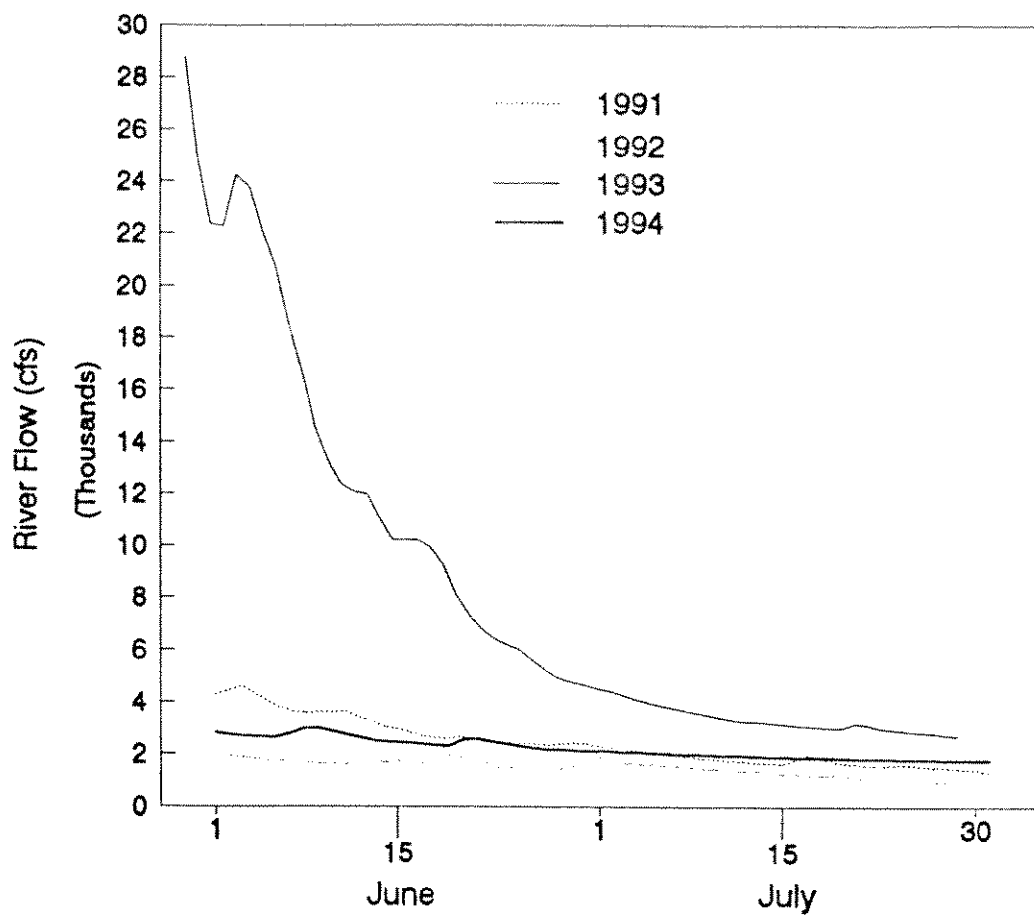
All trapping operations ceased by July 11 so little is known about the magnitude of the populations still migrating. Reports of dead and dying chinook, though infrequent, do continue. Exact causes are unknown but are believed to be related to high water temperatures. During the past five years, Klamath River mean daily water temperatures routinely exceeded 70 F by late June and early July (Figure 1). Mean daily temperatures this July are greater than recorded during the past five years and afternoon temperatures have occasionally exceeded 80 F. River flows in 1994 are similar to those in 1991 and 1992. Conditions in June and July of 1993 were perhaps the most optimum in recent years with above average flows and relatively low water temperatures (Figure 2). Barring any change in the weather this year, water temperatures will likely continue to increase.

The circumstances are unfortunate, and practical solutions to alleviate the problems are wanting. Current water temperatures in the upper basin are 72 - 75 F and supplies of cooler water do not exist. The on-going drought conditions continue to complicate resource problems in the Klamath River basin. The participating agencies are cooperatively seeking interim measures to resolve current and future problems.

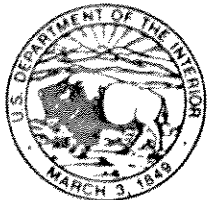


Klamath River mean daily water temperature at Big Bar, April to July, 1991 to 1994.  
(1991 - 1993 data @ Tempmentor, 1994 @ handheld thermometer)

## Klamath River Flow at Orleans



Klamath River flow at Orleans during June and July, 1991 to 1994.



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Coastal California Fishery Resource Office  
1125 16th Street, Room 209  
Arcata, CA 95521  
(707) 822-7201 FAX 822-8411

August 19, 1994

### Memorandum

TO: Klamath Fishery Management Council

FROM: Fishery Biologist, Coastal California FRO

SUBJECT: Updated water temperature data for the Klamath River.

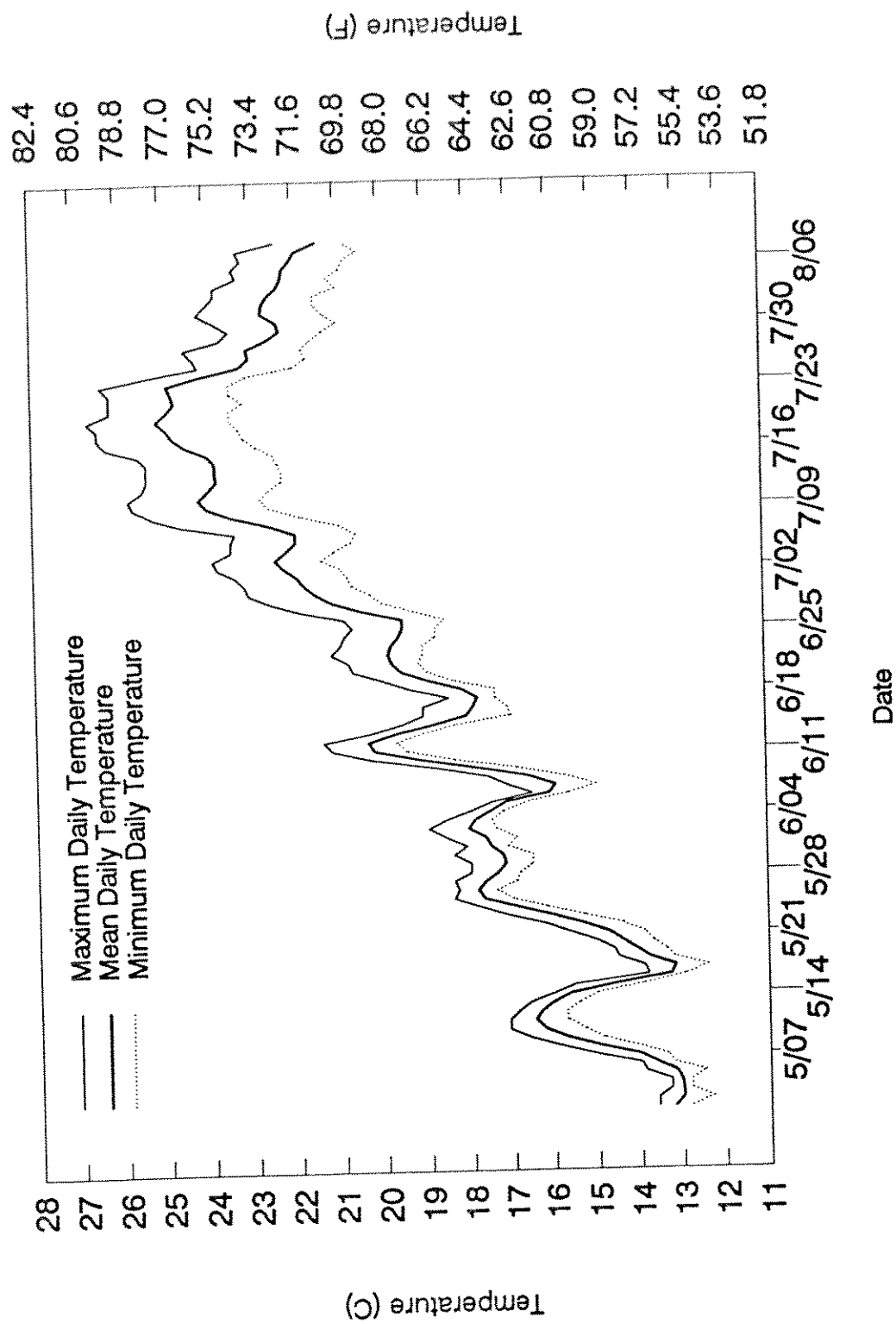
Updated Klamath River water temperature information, as promised. A graph depicting Klamath River water temperatures for the period between May 01 and August 08, 1994 is attached. I've also included a spreadsheet of temperature data for June 01 to August 08. All data was recorded at the rotary screw trap at the Big Bar access using a Ryan Tempmentor thermograph.

As I reported to Council on August 01 in Portland, juvenile salmonid fish kills were first reported on the Klamath River about the start of July. These observations continued for several weeks and were believed to be the result of high water temperatures. And now the good news! As you can see from the enclosed data, water temperatures began to decrease about July 20, and continued to decrease to August 08, the day the thermograph was removed from the river (another thermograph was installed). This welcomed decrease in river temperature may be attributed to the thunderstorm/rain event which occurred on July 20. The continued decline in water temperatures to August 08 may be attributed to the resulting fires in the Klamath basin. It is believed the widespread smoke from the fires may have reduced solar energy input into basin drainages resulting in steadily decreasing water temperatures.

Whatever the cause, the resulting drop in Klamath river water temperatures provided much welcome relief to salmonids. This office has not received any further reports of fish kills since late July.

Thought you'd like a little good news for a change.

James L. Craig



Daily mean, maximum, and minimum water temperature data recorded on thermograph for the Klamath River, Big Bar access, from May 01 to August 08, 1994.

Tempmentor installed 24 Feb 1994 @ Big Bar, Klamath River. Initiated @ 11:45 am (02/24/94), readings every 1 hour.  
 Terminated @ 1:00 pm on 08 Aug 1994, replaced with another unit. Mean, maximums and minimums calculated for 24 hour period.

Date	Mean		Min	Date	Mean		Max	Min			
	24 hr	Temp (C)			24 hr	Temp (C)					
01-May-94	13.2	13.6	12.8	01-Jun-94	17.6	18.6	16.9	01-Jul-94	22.0	23.4	20.8
02-May-94	13.0	13.6	12.3	02-Jun-94	18.1	19.0	17.4	02-Jul-94	22.3	23.8	21.0
03-May-94	13.0	13.3	12.8	03-Jun-94	17.9	18.6	17.5	03-Jul-94	22.5	23.9	21.4
04-May-94	13.1	13.3	12.8	04-Jun-94	17.5	18.0	17.2	04-Jul-94	22.2	23.5	21.1
05-May-94	13.2	13.9	12.5	05-Jun-94	17.2	17.5	16.6	05-Jul-94	22.0	23.5	20.7
06-May-94	13.6	14.0	13.2	06-Jun-94	16.1	16.5	15.6	06-Jul-94	22.0	23.4	20.6
07-May-94	14.0	15.0	13.4	07-Jun-94	15.9	17.1	15.0	07-Jul-94	22.6	24.6	21.0
08-May-94	14.9	15.8	14.1	08-Jun-94	16.6	17.6	15.7	08-Jul-94	23.5	25.3	21.9
09-May-94	15.7	16.6	14.9	09-Jun-94	17.9	18.8	16.9	09-Jul-94	24.0	25.7	22.6
10-May-94	16.2	17.1	15.3	10-Jun-94	19.2	20.3	18.4	10-Jul-94	24.2	25.8	22.8
11-May-94	16.5	17.1	15.7	11-Jun-94	20.2	21.2	19.5	11-Jul-94	24.0	25.5	22.6
12-May-94	16.3	16.9	15.7	12-Jun-94	20.4	21.4	19.7	12-Jul-94	23.8	25.4	22.3
13-May-94	16.0	16.6	15.4	13-Jun-94	19.7	20.3	19.1	13-Jul-94	23.8	25.4	22.3
14-May-94	15.6	16.0	15.0	14-Jun-94	18.9	19.6	18.3	14-Jul-94	23.8	25.4	22.4
15-May-94	14.6	15.5	13.9	15-Jun-94	18.1	19.1	17.0	15-Jul-94	24.0	25.6	22.5
16-May-94	13.3	13.8	12.9	16-Jun-94	17.9	19.1	17.1	16-Jul-94	24.5	26.3	22.9
17-May-94	13.2	13.9	12.4	17-Jun-94	17.8	18.5	17.4	17-Jul-94	24.8	26.5	23.2
18-May-94	13.8	14.5	13.2	18-Jun-94	18.2	19.4	17.4	18-Jul-94	24.9	26.5	23.3
19-May-94	14.1	14.6	13.4	19-Jun-94	19.0	20.0	18.4	19-Jul-94	25.1	26.7	23.5
20-May-94	14.4	15.0	13.7	20-Jun-94	19.6	20.7	19.0	20-Jul-94	24.9	26.2	23.5
21-May-94	14.7	15.6	13.9	21-Jun-94	19.8	20.8	19.2	21-Jul-94	24.7	26.2	23.2
22-May-94	15.3	16.2	14.4	22-Jun-94	19.9	21.2	19.1	22-Jul-94	24.8	26.2	23.5
23-May-94	16.0	17.1	15.3	23-Jun-94	19.8	21.0	19.1	23-Jul-94	24.9	26.4	23.5
24-May-94	16.9	17.8	16.2	24-Jun-94	19.7	20.9	18.8	24-Jul-94	24.2	25.4	23.1
25-May-94	17.7	18.4	17.0	25-Jun-94	19.6	20.7	18.8	25-Jul-94	23.3	24.2	22.0
26-May-94	17.8	18.3	17.4	26-Jun-94	19.6	20.9	18.6	26-Jul-94	23.0	24.3	21.7
27-May-94	17.7	18.4	16.9	27-Jun-94	20.5	21.9	19.3	27-Jul-94	23.1	24.5	21.8
28-May-94	17.4	18.0	16.8	28-Jun-94	21.2	22.6	20.0	28-Jul-94	22.6	23.7	21.6
29-May-94	17.2	18.0	16.5	29-Jun-94	21.5	23.1	20.3	29-Jul-94	22.3	23.5	21.3
30-May-94	17.2	18.4	16.5	30-Jun-94	21.8	23.2	20.7	30-Jul-94	22.4	23.8	21.0
31-May-94	17.5	18.1	17.1					31-Jul-94	22.7	24.2	21.3
								01-Aug-94	22.7	24.0	21.5
								02-Aug-94	22.6	23.8	21.5
								03-Aug-94	22.4	23.8	21.0
								04-Aug-94	22.3	23.3	21.2
								05-Aug-94	22.2	23.4	20.9
								06-Aug-94	22.1	23.2	20.8
								07-Aug-94	21.9	23.3	20.5
								08-Aug-94	21.4	22.4	20.8

October 1983

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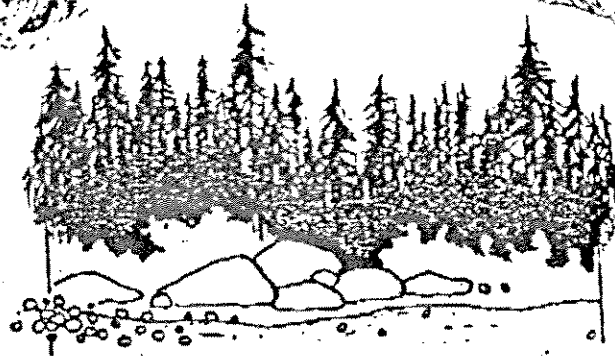
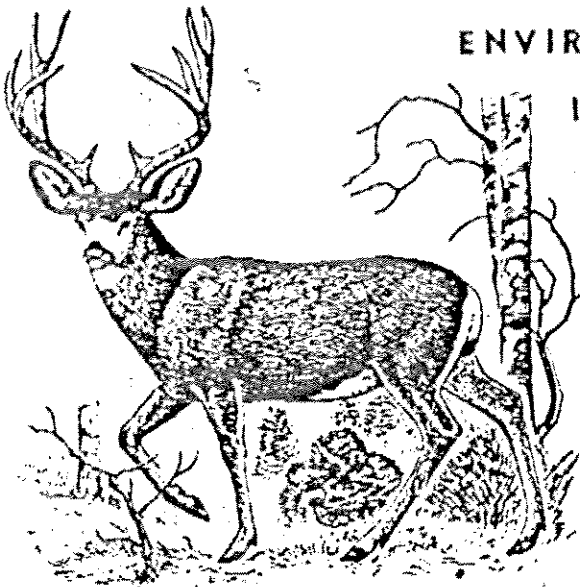
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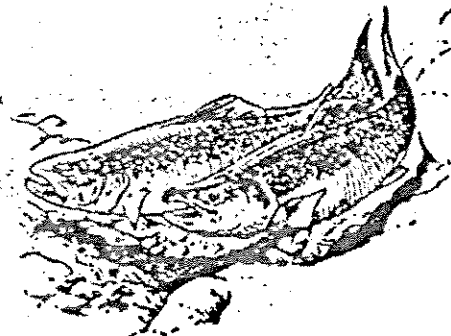
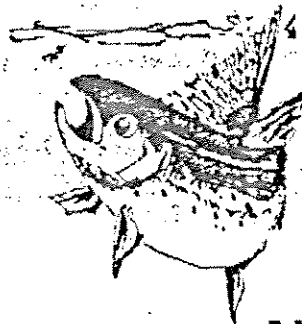
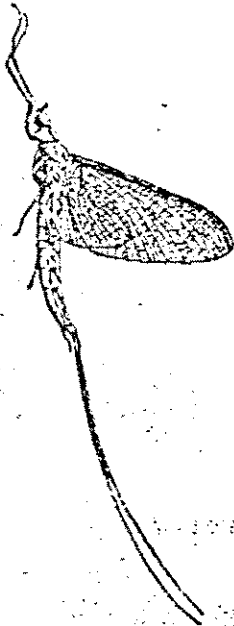
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OCT 25 1983

BOARD OF SUPERVISORS  
COUNTY OF TRINITY



TRINITY RIVER BASIN  
FISH AND WILDLIFE  
MANAGEMENT PROGRAM



prepared by

UNITED STATES DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE



TABLE III

TRINITY RIVER ADULT SPAWNING RUNS, ESCAPEMENT GOALS  
AND GAINS IN ESCAPEMENT WITH MANAGEMENT PROGRAM

1/  
**PL 98-541 Goals**

SPECIES	RECENT SPAWNING RUNS		ESCAPEMENT GOAL		PROJECTED ESCAPEMENT GAINS	
	HATCHERY	NATURAL	HATCHERY	NATURAL	HATCHERY	NATURAL
CHINOOK (1979-82)						
SPRING RUN	1400	4200	3000	6000	1600	1800
FALL RUN	2500	8700	9000	62000	6500	53300
COHO (1979-82)	2100	2050	2100	1400	0	0
STEELHEAD (1980-81)	2000	19400	10000	40000	8000	16900
		2/ 25200		3/ 50000		4/ 24800

1/ Run data in table are an estimate of general conditions. Many values are based on limited and presently unpublished DFG Trinity River Project data. Goals (including undefined steelhead catch) are as developed by California Department of Fish and Game for a fully restored Trinity River System.

2/ Includes estimated catch of 3800 adult fish in Trinity River above Willow Creek. Comparable run data not available for other recent years however, 1980-81 run was believed exceptionally large.

3/ Goal is for an equivalent run of 50,000 adult steelhead (inclusive of catch) in the Trinity River with a run of 10,000 at Trinity Hatchery.

4/ California Department of Fish and Game goal includes an undefined catch on an equivalent run of 50,000 adult steelhead.